



In-Situ Flowmeter Calibration for Carbon Credit Generation



Sage Metering

Sage In-Situ Flowmeter Calibration Check

Camco is in the business of carbon credit and renewable energy project development. Carbon credits can be generated for either voluntary purchase by corporations and organizations that have sustainability or goodwill initiatives or for purchase in compliance markets where qualified emitters, such as utilities, have greenhouse gas reduction mandates that they must meet. There are differences in the various standards or protocols used to develop voluntary and compliance-grade carbon credits; however the premise of developing any carbon credit is the same: greenhouse gas emissions of the "Project" must be less than the greenhouse gases emitted to the atmosphere in the baseline condition before the Project was built.

In North America, Camco is primarily focused on developing anaerobic digester projects that produce biogas from livestock manure and/or other organic materials. Biogas produced from digester projects is typically fed to engine generator sets to produce renewable electricity, used in a boiler, or is refined and compressed for use as "green" natural gas. Livestock anaerobic



digester projects that have a baseline condition of anaerobic lagoons for manure management are also candidates for carbon credit generation and can earn additional revenue from the sale of their carbon credits.

The key to generating carbon credits from livestock digester projects is good monitoring and data management. Biogas flow to each destruction device (e.g., engine gen-sets, boilers, and flares) must be continuously metered along with indication that the biogas destruction device is working properly (e.g. kWh meter readings from gen-sets and flare temperatures). Quarterly calibration inspection of the project's biogas flowmeters is an additional requirement for several of the leading carbon credit protocols, including the Livestock Protocol for California's Cap-and-Trade Program. Review of flowmeter calibration documentation is an essential part of the project carbon credit verification process.

The ability to calibrate the Sage thermal mass biogas flowmeters in-situ and on-site with no additional instrumentation provides both savings and ease to the carbon credit management program. Using manufacturer guidance, technicians and subcontractors quickly check the calibration of the biogas flowmeters in a repeatable and reliable manner that is accepted by the leading U.S. carbon credit protocols. Some of the project sites have thermal mass flowmeters that require electronic diagnosis calibration that can be performed on-site, however we find the in-situ test of the Sage thermal mass meter at zero flow of biogas or air to be the easiest calibration check method to conduct.

In summary, reliable biogas measurement is important both as an indicator of project performance (understanding system biogas production) and to carbon credit quantification. In-situ calibration is a fast and reliable method to check the calibration of biogas flowmeters that is consistent with the most widely accepted livestock carbon credit generation protocols.

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