

Emissions Monitoring Service

Measure, Analyse, Act - all in 1 day



VARIOLYTICS

Variolytics | 1-day emissions monitoring

Overview

At Variolytics, our mission is to empower wastewater treatment plants to achieve sustainability goals by providing innovative solutions. Our emission monitoring service is specifically designed to help treatment plants begin their journey.

The challenge of optimizing the treatment process for green-house gas emissions can seem overwhelming. However, operators can start through a 1-day evaluation of their emissions on-site with the EmiCo system, to gain an overview of their status quo.

The mobile analysis unit can be implemented on any site and measure emissions from multiple hot spots along the treatment process. Our team of experts will guide you through this process and determine these emission hot spots.

This service is designed as a gateway to showcase the potential of a permanent EmiCo solution. At the end of the evaluation, customers will receive an impact study, determining the current emission rates of the treatment plant and savings potential.

Your Path to Net-Zero



Customer Journey | 1-day emissions monitoring



1. Consultation

It all starts with consultation, where we take the time to understand your specific needs and challenges. We analyse your process data and determine the emission hot spots that should be monitored during the on-site visit.



2. Emissions testing

Armed with this knowledge, we move forward to the 1-day on-site evaluation. Throughout the on-site visit, the team, with the mobile analysis unit, will measure nitrous oxide and methane emissions at multiple spots. During this service customers can assess the effectiveness of the EmiCo system first-hand.



3. Savings analysis

After the site visit, our team will evaluate the collected data and provide an in-depth report of the findings. Based on these findings, Variolytics will provide scenarios of the total emissions of the treatment plant throughout the year. The report will conclude with an analysis of the energy and emission saving potential, determining the potential of an optimization project.



How does it work?

Mobile analysis unit

Our measurements are provided through a mobile analysis unit (mass-spectrometer) housed in a specially equipped vehicle. The vehicle is positioned near the aeration basins. From the measuring spot at the basin, a probe line delivers the sample to the analyser in the vehicle. This set-up enables flexible real-time measurements of emissions at wastewater treatment plants.



Hood and sample line

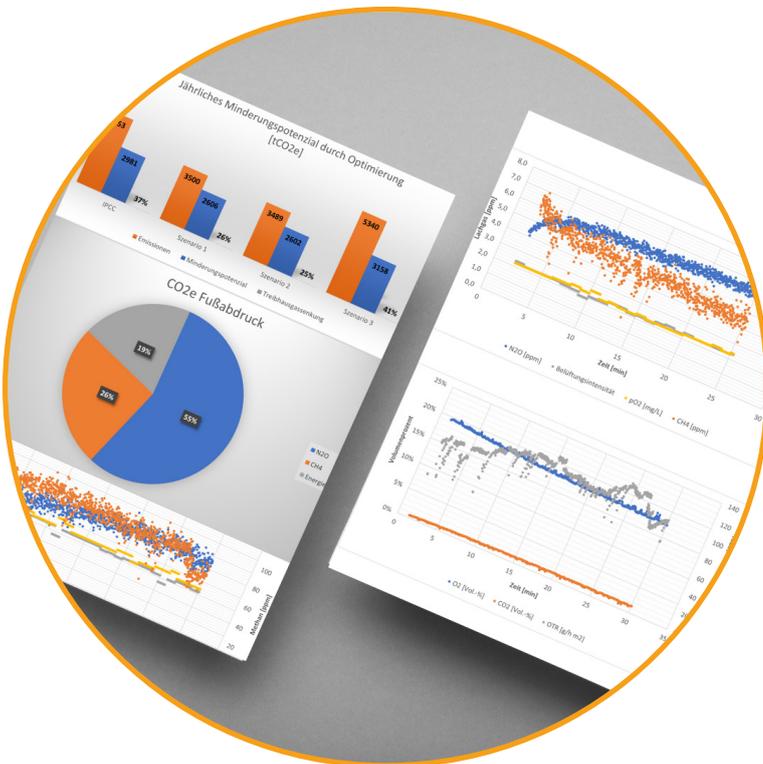
A hood is connected to the EmiCo system via a 100-metre sample line. The hood is positioned on the surface of the aeration basin and captures the exhaust air. Our in-situ probe is placed under the hood and provides liquid phase measurements. By changing the position of the hood at different points in the biological step, customers receive a broad overview of their emissions.



How does it work?

Emission rates

In addition to analysing the concentrations of N_2O and CH_4 from the liquid and gas phase, temperature and flow of the exhaust gas is measured, as well as O_2 and CO_2 . This provides precise insights into the formation, elimination and emission rates and gives customers additional information that can help optimise their plant.



Emissions report

After the test measurements are completed, customers will receive a detailed emissions report, as well as a comprehensive method statement of the analysis. This report contains important information such as the CO_2 footprint and the emission factor of the wastewater treatment plant. This data will help customers take targeted measures to reduce emissions and reach net-zero.



Why EmiCo emissions measurements?

Benefits

- 1. Accuracy:** Our measurements provide a precise and reliable analysis of your emissions, based on the latest scientific findings and technology.
- 2. Flexibility:** The mobile unit allows you to take measurements at different locations of your wastewater treatment plant, giving you a comprehensive picture of your emissions.
- 3. Data-driven decisions:** The results of the measurements provide you with valuable insights that help you take targeted measures to reduce emissions and increase the efficiency of treatment process in the future.
- 4. Expert team:** Our experienced team of process-engineers and scientist are there to support you throughout the entire journey.
- 5. Low-Cost:** This service provides a gateway to your path to net-zero, gaining confidence in your process-state, without committing to a larger long-term project.

What can be measured?

Mass-spectrometry-based analysis has a large measuring range, with low detection limits from the ppb to the 100% range. EmiCo provides multi-parameter measurements in real-time from the liquid & gas phase. EmiCo is calibrated to measure the following parameters, in relevant concentrations for emission control in wastewater:

- » **Nitrous oxide (N₂O)**
- » **Methane (CH₄)**
- » **Oxygen (O₂)**
- » **Carbon dioxide (CO₂)**
- » **Nitrogen (N₂)**



Pricing

1. On-Site Emission Monitoring	2,500€ per day
2. Travel Expenses (DACH)	500€ per day
3. Emission Report	4,500€

Our team of experts will visit your location to conduct the emissions monitoring service. With their experience, they ensure accurate measurements and provide real-time insights. Our on-site visit includes the setup, monitoring, and deconstruction of the equipment, ensuring a seamless experience for you and your team. Our customers are distributed throughout the region, and we charge a flat fee for daily travel expenses to reach them.

The emissions report is a comprehensive analysis of the monitored results and your organization's environmental performance. Through our analysis, we identify areas of improvement and provide you with a clear understanding of your emissions over the course of a year. This report is based on the latest scientific research and presents various scenarios to help you visualize and strategize for a greener future.

By choosing Variolytics, you gain access to cutting-edge technology and detailed insights into your environmental performance. Together, we can pave the way for a sustainable future, making a positive impact on the planet.

**Contact us today to schedule a consultation
and take the first step to net-zero!**



About Variolytics

Variolytics is a technology company, based in Stuttgart Germany, focused on measurement instruments and process optimization. The mission of Variolytics is to contribute to a more sustainable society by making the invisible visible. The company was founded in 2020, as a spin-off from Fraunhofer Society for the advancement of applied research in Germany. Prominent Investors of Variolytics include the High-Tech Gründerfonds and the Fraunhofer Technologie-Transfer Fonds. Since 2023, Variolytics is also supported by the EIC Fund for breakthrough innovation companies.

VARIOLYTICS

Making the invisible visible.

Supported by



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