Case Study

Netze BW

The challenges of tomorrow already addressed today

PICARRO

Netze BW

A company of EnBW

- **248,000 network users**
- **5,268 km of gas network length**
- **Among the first Picarro users and climate-neutral distribution network operators in Germany**

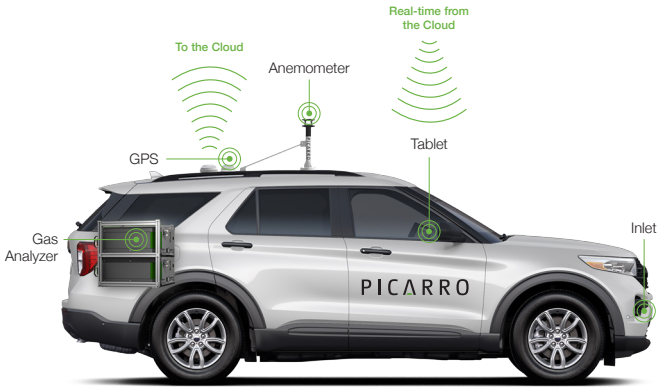


Figure 1 Vehicle-based analytics enables large-scale collection of measurement data to map existing methane emissions on the distribution network. This data forms the basis for further data analyses and for the representation of suspected leak areas (LISAs).

Introduction

In 2023, Netze BW started operating the Picarro system for vehicle-based detection and measurement of methane emissions from the natural gas distribution network. This not only prepares Netze BW for the upcoming requirements of the new EU Methane Regulation, but also enables them to increase their own system safety and further reduce methane emissions. Netze BW is also underlining its responsibility as a distribution system operator regarding reducing climate-relevant emissions.

Netze BW is one of the first German distribution system operators to implement this technology, thereby demonstrating their willingness to digitize and innovate.

Motivation

The EU Methane Regulation, which has been discussed since 2021 and was published in July 2024, is an organizational challenge for gas distribution system operators. It prescribes the reduction of methane emissions based on short intervals of LDAR measures (leak detection and repair) and gradually more extensive reporting obligations.

To be able to determine specific emission factors for the gas distribution system operator, which can be used to extrapolate to the total emissions, it is mandatory to measure emission rates for all detected leaks (methane sources). In addition, measurements must also be carried out at site level (i.e. entire towns or municipal areas with gas supply) so that no methane sources are overlooked in the LDAR measures. These different approaches to measuring methane emissions were not common practice among German gas distribution system operators or for Netze BW before the introduction of Picarro. Notably because these approaches are not possible with conventional measuring technology (e.g. the carpet sensor).

The additional requirements of the EU Methane Regulation come at the expense of an already strained personnel situation of skilled workers and qualified gas inspectors who, due to the weather, can only work in the dry and warm months.

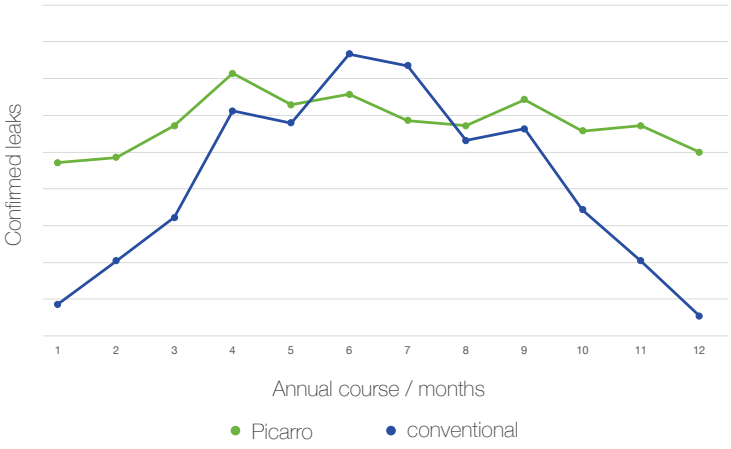
This situation prompted Netze BW to test the innovative Picarro solution as early as 2022 and,

after gaining positive experience, to finally introduce it into their workflow in 2023.

Results Achieved

It was only after its introduction that Netze BW discovered the full potential of Picarro, which goes far beyond compliance with the EU Methane Regulation. By collecting measurement data regularly and on a large scale, Netze BW can achieve high operational efficiency gains and at the same time further increase system safety.

The following graphic describes the number of confirmed leaks from history using conventional technology and after the introduction of Picarro. Netze BW can control the number of Picarro measurement runs in such a way that the number of confirmed leaks remains at an overall slightly higher and relatively constant level over the course of the year. This brings efficiency advantages in the downstream workflows of repair and coordination in particular. By slightly increasing the number of repairs, Netze BW wants to further increase system safety and at the same time reduce methane emissions more quickly.



The graphic also shows that the conventional work of gas inspectors is usually very seasonal due to the weather. With the introduction of Picarro, they can now be deployed in a very targeted manner in sections that the Picarro system has marked as suspected leak area or has not been covered. This means that gas inspectors are deployed much more efficiently and closer to their core competencies. The better planning of this work over the course of the year also means that this job profile is being given a real boost, so that the staffing situation is no longer so tense - and this despite shorter intervals for LDAR measures due to the EU Methane Regulation.

Summary

Netze BW's proactive approach has put them in a comfortable position to not only meet but exceed the current and future requirements of the EU Methane Regulation and other requirements. For example, it is of central importance to further optimize the condition of the gas network with the help of measurement data and thus prepare it for a hydrogen future.

Picarro uses real measurements to provide a foundation of data from which informed decisions can be made, e.g. for the efficient use of resources in pipeline replacement and personnel.

Key Individuals

In his role as system planner at Netze BW, Dr. Timo Ullrich recognized early on the significance of the emerging EU Methane Regulation. Michael Hahn, team leader for gas network inspection at Netze BW said, "A decision to invest in an innovative solution requires courage and the will to change, especially as one of the first national users." Hahn demonstrated this with his decision to use Picarro.

The regular Picarro Gas Community conferences have helped to ensure that there is also an exchange at an international level with various distribution system operators and Picarro users. In view of the new EU Methane Regulation, which is relevant for all EU member states, the Picarro Gas Community conference series is developing into an important platform for professional exchange.

LIT CODE: V1.0-240812
Picarro Sarl, 23 rue de Bourgogne, CH-1203 Geneva | sales@picarro.com | picarro.com/gas