

Case study

Shell Deutschland GmbH

Why LDAR is more than just holding an infrared camera

Shell Deutschland GmbH noticed an increase of VOC emissions in one of their refineries. Why did they reach out to Intero - The Sniffers and why is LDAR (Leak Detection And Repair) more than just holding an infrared camera according to Shell?

The pilot

"Our Monitoring Team noticed an increase of VOC emissions (Volatile Organic Compounds) in one of our refineries. Being a responsible operator, we wanted to locate the exact sources."

"Our expert group therefore started looking for a partner specialized in leak detection. Since Intero - The Sniffers was already a recommended service provider within Shell, we decided to contact them" says Mr. Jan-Oliver Schwarzlose, Emission Specialist at Shell Deutschland GmbH.

"Shell decided to start with a pilot project back in 2018 to locate the sources. "The pilot project went very well and we were able to close relevant leakers" says Mr. Schwarzlose.

LDAR is the standard

After the initial pilot project and the positive results, they decided to execute a full LDAR (Leak Detection And Repair) campaign for both facilities of the Shell Energy and Chemicals Park - Rheinland.

We

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Tank farm at the Shell Rheinland refinery



Shell Rheinland refinery in Godorf

As Mr. Schwarzlose adds, *"a dedicated LDAR (Leak Detection And Repair) program is obligatory within Shell and refineries are no exception."*

"Since we were pleased with how the pilot project went and since Intero - The Sniffers was already familiar with the sites, the decision to contact them again was quickly made."

Discussing best practices

Shell has a dedicated expert group who discuss best practices and techniques to execute for example a best-in-class LDAR program.

Mr. Schwarzlose adds that *"they concluded that classic LDAR with only TVA (Toxic Vapour Analyzer) would be too labour-intensive. Simply screening with an Optical Gas Imaging camera, on the other hand, would just give a rough indication but no exact concentrations of leaks."*

"In the end, the expert group decided to combine the best of both methods. More specifically, *"they chose a combination of first screening with the camera and, secondly, quantifying the detected leaks"* concludes Jan-Oliver.

LDAR is more than just holding an infrared camera

Shell could have also executed the measurements with their own staff. In the end, they decided to start the measurements and have them executed by a third party. Why exactly?

"In fact, LDAR is more than just holding a camera. The credibility of third party emission figures towards stakeholders, the expertise and in-depth reporting really make a difference."

Actual results make the difference

During the full LDAR campaign, there was one specific case that stood out to Shell and convinced the production manager of the benefits of a dedicated LDAR program executed by a certified third party.

"We had a compressor building where we observed a certain smell but could not spot the cause of it. The operator of Intero - The Sniffers screened the complete building and found that the sealing of one compressor was not tight enough."

"After the leak was detected, our production manager immediately shut down the compressor and had repair activities executed. It appeared that the VOC fumes escaping from that one seal were responsible for the smell across the building."

Mr. Schwarzlose emphasizes that *"it is the actual measurements that made the difference for us. Tangible results such as the compressor hall made everyone believe more in the effectiveness of executing LDAR."*

The credibility of third party emission figures towards stakeholders, the expertise and in-depth reporting really makes a difference.



Expert group

"Client success and realizing the environmental ambitions of our customers is our top priority. It was a pleasure working with Shell Deutschland GmbH. The mandatory requirement for dedicated LDAR programs by Shell as well as their belief in credible third party emission figures is promising" says Bas Hermans, Emission Division Operations Director of Intero - The Sniffers.

Mr. Schwarzlose is pleased with the collaboration thus far. According to him, *"Intero - The Sniffers is an expert group. They know what they are doing and their operators are experienced. I would definitely recommend them to other facilities within Shell for executing LDAR campaigns or other emission reduction services."*

"I am looking forward to continue working with them in the upcoming years and, most importantly, in seeing significant reductions in our fugitive emission figures" concludes Jan-Oliver Schwarzlose.

Introducing the Shell Energy and Chemicals Park Rheinland

The Shell Energy and Chemicals Park Rheinland in the southern outskirts of Cologne is one of five Shell future sites worldwide. For decades, the site, known as Rheinland Refinery - the biggest crude oil refinery in Germany - was the heart of Shell, which until now has been predominantly focused on fossil fuels. In the newly formed Energy and Chemicals Park Rheinland, up to 3,000 employees are now set to develop innovative energy ideas in partnership with industry, politics and society. In doing so, they'll be making an important contribution to Shell's goal of becoming a net-zero-emissions energy company by 2050 at the latest.

In the medium term, crude oil will only be used for specialty products such as chemicals, lubricants or bitumen. The new focus is on the circular economy, regenerative organic products, and green hydrogen. In this way, Shell is helping to create the structures for the energy and chemicals world of tomorrow with green, future-proof industrial jobs. The first new plants - such as a 10-megawatt hydrogen electrolysis plant - have already been completed. Construction has begun on a bio-LNG plant. And there are concrete plans for a 100-megawatt hydrogen electrolysis plant, as well as a bio-PTL plant to produce sustainable aviation fuel.

To better achieve its ambitious goals, the park is opening the gate to investors, partnerships and other engagements in the fields of petrochemicals, circular economy, biofuels, hydrogen, and green power. Additionally, an Energy Campus is being created in Wesseling. It will serve as a modern hub where companies, start-ups, research institutes and other players can jointly drive the development of technologies for the energy transition.

Ever-evolving solutions

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