

Emissions and odour control for a sustainable future

Oil Review Middle East sits down with Kai Sievers of German firm ENDEGS, developer of the world's first fully equipped autonomously operated, trailer-mounted vapour combustion unit, which has been awarded the TOP 100 seal 2021 as one of the 100 most innovative companies in the German SME sector.

SIEVERS EXPLAINS THAT the performance of ENDEGS VCU is scalable from 0.1 to 50 MW, with units available in 5, 10 or 20 MW capacity. Its emissions treatment technologies have been used over years – mainly tank and pipe degassing, VRU replacement and loading application – some of them lasting up to three years and involving the degassing of hundreds of liquid gas tankers or sea vessels.

Giving the background to the development of the VCU, Sievers says, “In 2007 I asked myself as an engineer how it might be possible to design a mobile device for reducing VOC & HAP (Hazardous Air Pollutants) of storage tanks, tanker ships and pipes during maintenance or in case of non-functioning of existing infrastructure. It seemed to be absurd to simply accept that gases and vapours had to be released to the atmosphere, thousands of tons a year, for lack of a suitable solution.

“In 2008 we developed the world's first trailer-mounted VCU for burning off hazardous gases. Since then, our leading-edge and patented technologies have enabled the on-site combustion of hazardous, explosive and/ or toxic gas mixtures, safely and very nearly completely. Our systems reduce emissions by more than 99.99%. Thus, we make a substantial contribution to reducing emissions in Europe, North Africa and soon in the Middle East.”

“With any invention, you keep seeing ways to improve it,” Sievers continues. “So, we soon developed and patented a process that takes care of other pollutant streams (for example from a vacuum truck or intermediate tanks) during tank degassing. Shortly thereafter followed a patent that reduces the consumption of operating resources and extends the scope of applications.

“In 2010 we were the first company in the world to start burning off ammonia with excellent measured results. Today we're in demand worldwide for degassing ammonia tanks. Further development work to the



Railcar loadings.

Image Credit : ENDEGS

“Our systems reduce emissions by more than 99.99%.”

combustion chamber allows us to degas substances that tend to polymerise, without smoke or flame and without polymerisation, giving us another unique capability.

“We also developed and certified systems for explosion group IIC products (such as hydrogen), so now we're the only provider of safe degassing for all hazardous substances of explosive classes – IIA, IIB, IIC.

“To be able to degas liquid and gas tankers on the Rhine in Germany, the company has brought forward suggestions to modify the authority's regulations. Today, ENDEGS cooperates with the Port of Duisburg to create the first legal option for environment-friendly degassing.”

ENDEGS frequently stands out as the market leader in industry comparisons, Sievers notes. “We score high on real-world testing too, like we did recently at the port of Rotterdam. The result was that we were 40% faster than others, meaning 40% less berth time for the tanker, which is a huge cost saving, and our emissions were lower than the competition by a factor of 20. Local authorities were delighted.

“All of this makes me extremely proud, the more so as the Top 100 seal now also makes our innovativeness visible to all. And it's not just in Germany. Our technologies are greatly appreciated internationally as well. Customers let us know that they perceive us as unique. ■”

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