

Safe, sustainable and efficient chemical tank farm management

This success story from Friedrich Scharr KG's state-of-the-art chemical tank farm in Stuttgart, Germany, highlights how intelligent measurement technology from VEGA, combined with well-thought-out plant design, contributes to safety, sustainability and efficiency in chemical logistics.

With a storage capacity of 2 million litres, distributed across 40 tank chambers in 22 above-ground tanks, a new tank farm at Friedrich Scharr KG is a high-performance centrepiece of the company's chemical logistics operations. A wide variety of water-polluting substances, such as solvents and fuels, are stored and processed there.

A fully automated filling system for all container types and a 15 000-litre mixing tank for customer-specific solvents round out the existing infrastructure. During the construction of the new tank facility, special requirements, such as earthquake safety and the placement of storage containers across multiple floors of the building, had to be addressed. The project aimed to improve economic efficiency, maximise plant safety and minimise environmental impact. These requirements are being met thanks to advanced level and pressure measurement technology from VEGA.

Efficient chemical logistics

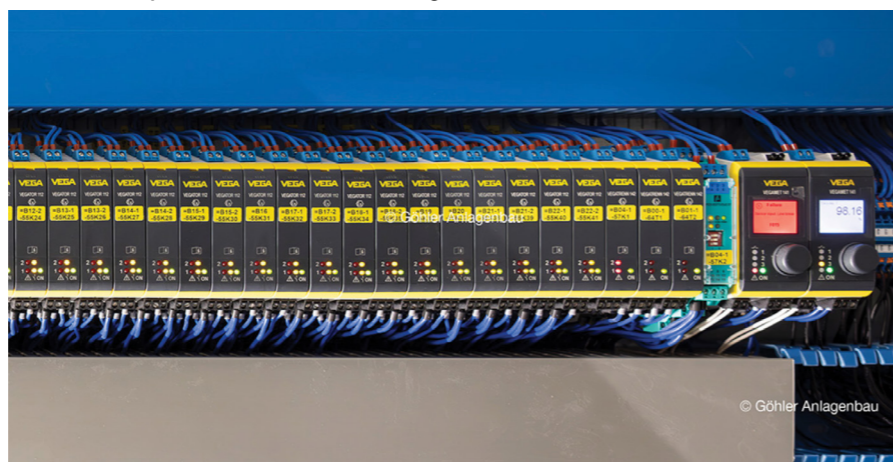
By eliminating internal shuttle trips between the old tank farm and the truck scales on the company premises, the new tank farm could also be optimised for emissions and energy consumption. The measurement technology integrated into the processes played a decisive role here. Precise pressure measurement technology and level monitoring, with continuous data transmission, ensure that hazardous substances do not escape or mix. The VEGA instrument technology, therefore, not only ensures safety but also helps to automate the filling and mixing processes. The use of renewable energy sources, such as photovoltaics and district heating, improves the ecological balance and promotes sustainability.

Key technology supplied by VEGA

For precise level monitoring, overfill protection and early leak detection, the company relies on advanced measurement technology from VEGA. Among other instruments, around 170 VEGASWING series 63 and 40 vibrating level switches, as well as 40 VEGAPULS series radar level sensors, have been deployed. These not only enable con-



The new chemical tank farm at Scharr is equipped with around 170 VEGASWING 63 vibrating level switches, which protect the tanks from overfilling and leaks.



WHG testing of overfill protection devices is considerably simplified by using VEGATOR controllers.

tinuous level measurement but also provide reliable overfill protection in accordance with the WHG (German Water Resources Act).

At the heart of the system is a VEGATOR controller installed in a switching cabinet, which allows the sensors to be tested centrally without entering hazardous areas. This controller transmits NAMUR signals (IEC 60947-5-6) and provides a relay output for VEGASWING, VEGAVIB and VEGAWAVE vibrating level switches.

This effectively moves the test button for the function check from the tank level switch to the controller in the switching cabinet,

where a simple WHG-compliant function check can be carried out at the touch of a button, allowing all sensors to be tested centrally. And all of this without having to apply time-consuming and costly methods, such as filling the container to the response level during operation or manually checking the individual probes by dismantling them, an action that can also be extremely dangerous.

The use of VEGA instrumentation, therefore, not only saves time and money but also increases occupational safety. This represents a huge advantage in plant operation, especially in the hazardous areas of chemical plants,

where many sensors are installed.

Flexible sensors for maximum safety

VEGA technology also impresses users with its safety features: Thanks to flexible locking screw fittings, VEGASWING vibrating level switches can be configured in standard lengths, which simplifies spare parts inventory and planning. Furthermore, the sensitivity of the level switches used as pump leakage sensors can be adjusted individually, enabling reliable detection of even low levels in collecting trays – a decisive advantage when storing volatile or low-viscosity chemicals such as solvents.

The VEGAPULS radar sensors installed utilise 80 GHz technology, which offers numerous advantages: they require only small process fittings, and thanks to their narrow-beam focusing, they deliver precise readings even in tanks with agitators or internal fixtures. What is more, the free-air radar operates without contact with the medium, so material resistance is less of an issue.

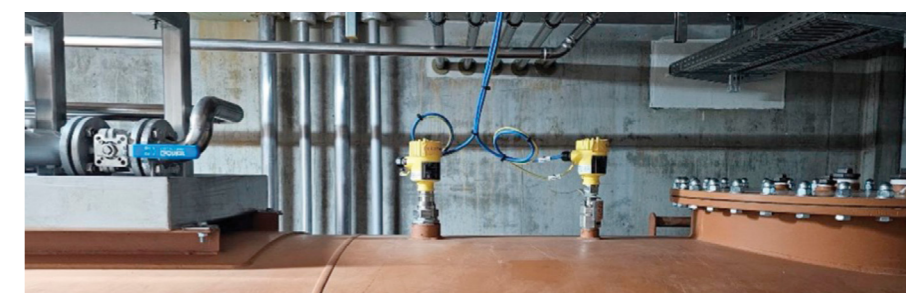
VEGA uses high-quality materials such as 316L stainless steel and, for radar antennas, the super-tough plastic, PEEK, which guarantees a long service life and maximum chemical resistance, even in extremely aggressive media.

These properties are indispensable in chemical logistics, where reliability is paramount.

In the Scharr project, plant engineering firm Göhler implemented very high safety standards and used additional mechanical level switches to minimise risks.

The new chemical tank farm at Friedrich Scharr KG is a prime example of how intelligent measurement technology, combined with well-thought-out plant design, can contribute to safety, sustainability and efficiency in chemical logistics. With its level and pressure measurement solutions, VEGA provides the technological backbone for safe and environmentally conscious operations.

"VEGA measurement technology sets standards in operational safety and measurement accuracy for these processes," explains René



The tightly focused measuring beam of the VEGAPULS 6X radar level transmitter with 80-GHz technology allows installation with small process fittings.

Kozica, project manager at Göhler.

The project impressively demonstrates how technological innovations address major challenges in chemical logistics – while meeting legal requirements and high safety standards and offering economic benefits, particularly through operational efficiency.

Measurement technology is far more than just a technical component; it is the key to sustainable storage of hazardous substances. By leveraging diverse redundancy – by combining different measurement principles – Scharr achieves the highest level of operational safety. Even though modern radar systems can already take over the task of overfill prevention in compliance with WHG, Göhler relies on additional mechanical point-level sensors to minimise risk.

<https://www.vega.com/en-za>

CSIR champions EU-SA partnership on battery raw materials

South Africa is taking a leading role in the global green economy through a new European Union (EU) partnership to build a world-class value chain for battery raw materials. The Council for Scientific and Industrial Research (CSIR) has been selected to drive the Team Europe Initiative (OP-VET), which will align skills development, industrial investment and clean energy innovation to create jobs and unlock local economic value.

This initiative, born from the South Africa-EU Clean Trade and Investment Partnership, will equip youth and women with the skills needed for a sustainable, high-tech future, from mining and refining to recycling critical minerals. By linking education, industry and innovation, South Africa is not just powering batteries, it is powering a new era of green industrial growth and employment.

The initiative builds directly on the Clean Trade and Investment Partnership signed at the South Africa-European Union Leaders' Summit on 20 November 2025, held ahead of the G20 Leaders' Summit. The partnership commits South Africa and the European Union to deepen cooperation in the extraction, processing, refining and recycling of critical raw materials, particularly for the battery value chain, while advancing decarbonisation, clean supply chains, and inclusive economic growth through invest-

ment, skills development and job creation.

The OP-VET project aims to strengthen the capacity of South African Technical and Vocational Education and Training (TVET) institutions, as well as the broader skills development ecosystem, to deliver demand-driven, employment-oriented training aligned to the critical minerals and battery value chain.

By integrating industrial skills foresight, curriculum adaptation, lecturer upskilling and structured workplace learning, the project seeks to improve employability outcomes for youth and women, support industry access to a skilled workforce, and contribute to sustainable local value addition.

The expected impact includes improved alignment between industrial investment and skills demand and supply, increased absorption of graduates into decent work, and the institutionalisation of an opportunity-driven TVET model that can be replicated across other Global Gateway-linked sectors.

Key outcomes and deliverables of the project include the identification of priority occupational profiles and skills needs across the critical raw materials and battery value chain, led by the CSIR. In collaboration with consortium partners, including the Energy and Water Sector Education Training Authority, the project will support demand-led co-development and

accreditation of new or adapted occupational qualifications and short courses. TVET college capacity will be strengthened through train-the-trainer initiatives and targeted infrastructure support for technical workshops.

The project will also facilitate training, internships and Work-Integrated Learning (WIL) placements with private-sector partners, ensuring practical workplace exposure and clearer employment pathways for graduates. Additional deliverables include strengthened public-private partnerships, enhanced policy uptake through engagement with national institutions, and the development of a scalable model to support South Africa's growing green industrial economy.

The CSIR's participation in the TEI underscores South Africa's growing role in the global green economy. It reflects the shared commitment of the EU and South Africa to skills development, clean industrial growth and sustainable value chains.

By linking education, industry and innovation, the project will not only enhance employment opportunities for youth and women but also establish a replicable, opportunity-driven model for TVET and workforce development across critical sectors, driving long-term economic and environmental benefits for the country.

<https://www.csir.co.za/>