



INSIGHT



Tank storage provides an essential interface between sea, road, rail and pipeline logistics.

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STANLOW TERMINALS IS TRANSFORMING FOR TOMORROW: IN CONVERSATION WITH MICHAEL GAYNON

The quarterly magazine from the Tank Storage Association

Also in this issue, we look at the risks posed by natural hazards to bulk liquid storage facilities and how new career pathways will ensure bulk liquid storage drives our greener future.



Insight is published by the Tank Storage Association, the voice of the UK's bulk storage and energy infrastructure sector.

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Peter Davidson Executive Director, TSA

Welcome to the winter edition of Insight. November saw world leaders gather in Egypt for the 27th session of the Conference of the Parties (COP 27) with a view to building on previous successes and paving the way for future ambition to effectively tackle the global challenge of climate change. The bulk storage and energy infrastructure sector in the UK has been vocal in its commitment to supporting the achievement of the Government's climate neutrality targets. In this issue, we explore our sector's ambitions, innovations and transformative journey as it plays its part to ensure the UK can meet its Net Zero target. We also explore the role of education and training as we prepare for the future and ensure that future skills needs will be met. I hope you enjoy this new edition of Insight and don't forget to follow us on social media for all our latest news.

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Online meetings and webinars

The following meetings will take place online:

- 6 December 2022: TSA Energy Transition Committee
- 8 December 2022: TSA Council
- 15 December 2022: TSA SHE Committee

For more information on TSA's meetings, write to info@tankstorage.org.uk

News:

The Tank Storage Association has launched a new Instagram account. Stay up-to-date with all our latest news by connecting with us @uk_tsa.

TSA's annual review of the UK's bulk liquid storage sector is available at www.tankstorage.org.uk/publications



Autumn Statement & 2023 Rating Revaluation

Business Rates bills are all based on the product of a Rateable Value and a Multiplier. On 17th November 2022 in his Autumn Statement, Chancellor Jeremy Hunt confirmed that the 2023 Rating Revaluation in England and Wales would proceed, with a valuation date of 1st April 2021. This is the first Revaluation since 2017, which had a valuation date of 1st April 2015. This six-year gap is very unfortunate. The proposed 2022 Revaluation was changed to be from 2021 which was then cancelled altogether due to the Covid pandemic. The Devolved Administrations in Scotland and Northern Ireland are now expected to confirm their own 2023 Revaluations.

New Rating Assessments come into force from 1st April 2023, but there are important differences in the valuation dates. In England and Wales, the valuation date is 1st April 2021, a date chosen by the Government to allow the impact of the Covid pandemic to be considered. This followed a law change ruling out any Rating Appeals citing Covid as a "Material Change in Circumstances". In Scotland, the valuation date is 1st April 2022. In Northern Ireland, the 2023 valuation date is 1st October 2021, with their last Revaluation having taken place in 2020, with a valuation date of 1st April 2018.

"It is an important principle that (rates) bills should accurately reflect market values" said Mr Hunt in his Autumn Statement. This is widely agreed. A Rateable Value is an estimated annual rental value. For most properties such

as shops, offices, and warehouses, there is rental evidence available to set Rating Assessments. The big winners from 2023 are the Retail and Hospitality sectors, where Rateable Values have come down, reflecting the drop in retail rental values, and where there are also further support measures. The good news in England, for all ratepayers including TSA members, is that the 2023/24 multiplier is frozen at the 2022/23 level, a reduction of over 10% in Rate Liability. The Industrial and Logistics sectors have seen rental value increases, resulting in higher draft 2023 Rating Assessments. The industrial theme applies also to the Bulk Liquid Storage sector. There is no rental evidence, so Rating Assessments for Bulk Storage terminals are set using a Depreciated Replacement Cost approach, combined with a Decapitalisation Rate which is set by each Devolved Administration.

Replacement costs for Rateable plant and Machinery, and commercial property values, increased from 1st April 2015 to 1st April 2021. The Welsh Assembly invited representations regarding the setting of the Decapitalisation Rate for the 2023 Revaluation, which included a submission from this practice. The Welsh Assembly correctly decided to reduce the Decapitalisation Rate, by 11%. A quick study of TSA member terminals in Wales indicates 2023 Rateable Values rising by no more than 20%. In England, no consultation took place about the Decapitalisation Rate,

with the same figure retained from the 2017 Revaluation. This is incorrect and too high. Representations are now needed to seek to correct this for the many industrial businesses affected, including TSA members. For England, draft 2023 Rateable Values are typically 30% up on the 2017 Rateable Values. The good news is that next year's rates bills are limited to a cap of 30% above this year's bill, and with no 10% inflation factor. No significant changes are expected next year in Northern Ireland, with the 2023 Revaluation following on soon after the 2020 Revaluation. Final thoughts though are on Scotland which has a valuation date of 1st April 2022, so there are seven years of cost and land value increases to consider! At the time of writing, 18th November, no further details for Scotland, Wales, or Northern Ireland are known.

Author

David McCausland is Head of Rating at Farebrother Chartered Surveyors. He is a known specialist in the bulk liquid storage sector, a member of the UKPIA Rating Panel, and a guest lecturer for the RICS Rating Diploma course (Plant & Machinery Module).

REDUCING OIL STORAGE TERMINAL EMISSIONS THROUGH DIGITALISATION

Remote thief hatch monitoring helps terminals identify any unsealed hatches quickly, which can significantly reduce emissions.



The European Union has ambitious emissions reduction goals. The European Climate Law seals the EU's commitment to reduce greenhouse gas emissions by at least 55% from 1990 levels by 2030 and become carbon neutral by 2050. Additionally, the United Kingdom has its own goal to reduce emissions by 78% compared to 1990 by 2035 and reach net zero by 2050. Naturally, these goals affect all industries, the oil terminal industry included. Efforts to reliably reduce energy consumption and emissions will require clear visibility into operations — not guesswork — powered by innovation and new monitoring technologies.

Digitalisation and the data-driven decision-making it empowers are not new to the European tank storage sector. By integrating connected technologies throughout terminals, businesses have received many advantages, including lower costs, greater reliability and lesser risk. One of the elements in the terminal to recently receive greater digital capability is the thief hatch.

Almost half of all emissions in major oil basins are from storage tanks, and a primary way that emissions escape is through open thief hatches. Storage tanks are typically located on remote sites that can cover many kilometers. They may go days without a site visit and physical inspection. If thief hatches are accidentally left unlatched, they may go undetected — and release fugitive emissions — for a long time. Remote thief hatch monitoring helps terminals identify any unsealed hatches quickly, which can significantly reduce emissions.

Minimising emissions through thief hatch monitoring

Thief hatches have several important functions. They serve as a tank's maintenance access hatch and the primary level of pressure protection for venting and vacuuming. Thief hatches have historically allowed producers to check tank levels and media properties required to complete custody transfer; however, because of fugitive emissions and worker safety, this is a practice the industry is trying to move away from.

During site visits, thief hatches are frequently accessed by a variety of personnel measuring the contents of storage tanks, transferring fluids to and from the tank or testing the thief hatch seals. Unintentionally, hatches may be left fully open or, more frequently, closed without being securely latched. Without reliable monitoring, days or weeks



may pass before personnel notice an open or unsealed hatch and close it. As chemicals evaporate, the vapors escape through the open hatch and enter the atmosphere.

As a sealing element, thief hatches are inherently subject to leakage. While manufacturers and producers have long collaborated to develop better, tighter sealing thief hatches, no seal can account for a failed closure. A newly built, closed and properly sealed thief hatch can limit emissions, but a hatch left open or not fully sealed allows emissions to continuously vent out into the atmosphere. Not only is this an environmental concern, it can also result in lost product.

Monitoring solutions help terminal operators to confidently know that a hatch is sealed. The latest technology can provide precise data that includes how long each hatch at a terminal is open and confirmation that it's closed and securely sealed after access, which can allow for measurement of total site emissions.

Improving monitoring accuracy and device installation

While thief hatch monitoring solutions have been available in the past, these early designs had a consistent issue — false signaling. The first monitoring systems sometimes made no distinction between a latched and unlatched thief hatch switch, which resulted in a false trip. A false trip can have substantial consequences. Since the thief hatch may display

Remotely located oil storage terminals often receive infrequent personnel visits, which means that open thief hatches may not be detected for long stretches of time. (Image courtesy of Emerson)



Emerson's thief hatch monitoring solutions offer simple installation on both new and existing thief hatch models and can reliably sense that thief hatches are properly latched. (Image courtesy of Emerson)



as open when it is, in reality, closed and latched, operators may invest unnecessary time manually checking thief hatches.

Another challenge is the sheer range of thief hatch designs in the field. There can be thousands upon thousands of thief hatches in terminals, from brand new to decades old. It's essential that a monitoring solution easily installs on and fits multiple models and designs. Mounting patterns, latch positions and angles differ from product to product.

There are now advanced solutions that address the biggest challenges in thief hatch monitoring. The latest monitoring technologies reliably sense a thief hatch is properly latched

[Emerson's AVENTICS™ Series AF2 Sensor continuously monitors air consumption in pneumatic systems and provides insights that can help terminal operators quickly detect and address leaks. \(Image courtesy of Emerson\)](#)



and easily install in the field on both new and existing thief hatch models. Producers can receive these solutions in modular mounting kits that allow them to retrofit their thief hatches in the field using only simple tools.

The kits include an ultra-reliable, sophisticated proximity sensor and easy-to-install wireless transmitter that precisely and continuously monitor hatch position in real time, allowing operators to confidently ensure that hatches are fully sealed when not being accessed.

The precision position sensor is specifically designed to signal only when a lid is fully latched. Proven in mission-critical, process applications, it features a robust bracket design that guarantees no false signaling will occur. The sensor is designed to reliably operate in high- and low-temperature extremes and high-pressure and potentially explosive environments.

Like a proximity switch, the sensor has no moving parts and uses magnets to detect a ferrous metal or magnetic target. Like a limit switch, it provides highly precise readings. By combining these features, the sensor requires far less maintenance than traditional limit switches and performs within harsh environments that often prohibit the use of other technologies, such as inductive or capacitive sensors.

The sensor can connect to the

wireless transmitter, which offers control system access to discrete points that are otherwise not connected due to wiring costs and lack of input/output. The transmitter automatically keeps a time-stamped record of each time the thief hatches are open and closed. Operators can access a 24-hour automatic log of thief hatch status, which reduces the need for visual tank inspections. Since the connected sensor doesn't draw power, optimising the battery life of the wireless transmitter, both devices are certified for global explosion-proof applications.

The simplicity and sophistication of the design allow producers to easily install the system on both old and new thief hatches and remotely monitor their status without false trips. This helps ensure that emissions readings are accurate and reduces personnel trips to the field.

Identifying opportunities to reduce energy use

In addition to thief hatches, there are many other opportunities in oil terminals to reduce emissions. If left unchecked, pneumatic systems can use more energy than they need, resulting in excess consumption and higher carbon emissions. By optimising the energy consumption that pneumatic systems use, terminals can reduce emissions levels.

One way to optimise the energy use of pneumatic systems is by detecting

and addressing compressed air leaks. Compressed air production can be responsible for a considerable percentage of a terminal's energy use. If there are leaks in the line, more air than necessary must be produced to compensate for what's lost. Advanced air flow sensors can continuously monitor air consumption in pneumatic systems, and the visibility can help terminals reduce energy use as well as unplanned downtime. These stand-alone sensors are more than flow meters — they provide diagnostic data and insights that help operators quickly detect and address leaks and perform predictive maintenance that can prevent leak formation. Sensors can also interface with digital control and other systems and be retrofit on an existing pipeline up to 50 millimeters.

Another way to reduce energy consumption and, in turn, emissions is to replace solenoid operating

valves (SOVs) with lower-wattage models. There are now Ex d direct-acting valves available that use less than 2 watts. This can save more than 10 watts per SOV compared to standard models, which translates to a savings of 87.4 kilowatt hours. This may not sound like much, but terminals can have hundreds of SOVs that can usually last 10 years before replacement. Plant-wide energy savings and emission reduction can be significant.

Some terminals may use smaller valves commonly controlled by a rack-and-pinion actuator. These are usually NAMUR-interfaced and controlled via a NAMUR SOV. The latest valves feature Piezo technology and operate at 0.0007 watts, the lowest of any ATEX SOV.

Cutting emissions through reliable monitoring

As the process industry responds

to climate neutrality, reliable monitoring is a critical step toward emissions reduction, as well as digital transformation. The latest thief hatch and pneumatic solutions are essential tools for achieving both.

Whether terminals are just starting out or have mature digital transformation programs in place, it's important that they have an expert partner to support them. Technology providers like this offer a comprehensive portfolio of intelligent solutions, from valves and sensing technology to software and services, that can help reduce emissions while optimising the safety, reliability and performance of a terminal's most demanding applications.

It's critical to monitor and confirm that terminals have no issues, like open thief hatches and pneumatic leaks, that could contribute to carbon emissions. By implementing reliable monitoring systems, terminals have greater asset and system visibility, giving them the power to make informed decisions that can address — or altogether prevent — emissions.

Author

Mike Howells is the marketing manager for process in Europe, the Middle East and Africa for Emerson. He has been with Emerson for 25 years and understands the importance of digitalisation and sustainability in the industry. To know more, contact Mike. Howells@Emerson.com. For more information, visit www.emerson.com/en-gb/automation/asco.

The solenoid valves powered by a rack-and-pinion actuator in Emerson's pre-engineered Bettis™ VOC-PAC™ Actuation Package feature Piezo technology for ultra-low power consumption. (Image courtesy of Emerson)



UM TERMINALS PASSES QUALITY AUDITS WITH FLYING COLOURS

Continually meeting customer expectations is firmly at the top of the agenda for UM Terminals' dedicated team.



Continually meeting customer expectations is firmly at the top of the agenda for UM Terminals' dedicated team.

An integral part of achieving this goal involves ensuring the business is meeting the labyrinth of quality standards and industry accreditations. During recent weeks, UM Terminals has undergone an intensive programme of external audits – something that would usually be spread across a year but could not happen due to various unforeseen circumstances. It was also the first time in over two years that on-site audits had been possible due to the Covid-19 pandemic.

Responsibility for preparing for the audits lies with Jo Winning, UM Terminals' Quality, Performance & Development Manager, along with Karl Pass, who was recently promoted to the role of National Operations Manager. Jo and Karl are further supported by the various terminal managers across the company's eight sites and other key members of the team.

Audits carried out include the Universal Feed Assurance Scheme (UFAS), FSSC 22000, the certification scheme for Food Safety Management Systems, for its Regent Road and Gladstone Dock sites, and the Halal certification for Regent Road.

The company's ISO9001:2015 quality management accreditation was also audited.

Jo said: "We received excellent feedback from the auditors regarding our planning and performance, including the high quality of our operations and Client Central Services teams. As a business, we pride ourselves on our capability to manage change. One recent example of this was how quickly we flexed to meet the new requirements of a Scandinavian customer which took a much larger tank that has been specially converted to store an AdBlue product. From day one of this project, everything went according to plan thanks to our forward planning, engineering expertise and attention to detail. As a business, we are only as good as our people and during recent months we have developed new terminal managers to ensure we have the right people in the right places. Karl's promotion to National Operations Manager has also been an important step forward. We were particularly pleased with the FSSC 22000 and Halal audits as these accreditations have only been in place since last year."

Further audits, including the Fertiliser Industry Assurance Scheme (FIAS), will take place before the end of the year.

UM Terminals and other companies owned by UM's holding company W&R Barnett will also be scrutinised for their sustainability credentials via the Energy Savings Opportunity Scheme (ESOS) which assesses energy usage, including boiler efficiency.

Jo added: "The audits are important for our customers, staff and other stakeholders. We want our customers to know we are committed to excellence in everything we do, and our success is a real morale booster for our teams. We welcome the new audits around sustainability. We are committed to an ongoing programme of investment in our assets, and this includes enhancing our energy efficiency which is good for us and our customers. We also never rest on our laurels. We have already embarked on a calendar of internal audits and continue to invest in the training of our people, ensuring the training is appropriate to each of our facilities."

Vic Brodrick, UM Terminals' Interim Managing Director and Commercial Director said: "We are committed to a continuous programme of investment to guarantee that UM Terminals is best placed to meet the needs of our customers today and tomorrow. Thanks to the sterling work of Jo Winning, Karl Pass, our terminal

managers and other members of the team, the business has come through a series of highly intensive audits with flying colours."

UM Terminals operates out of 8 terminals, strategically located across the UK, handling over 40 different products. It currently has a capacity of over 300,000 cubic metres of bulk liquid storage, but the plan is to grow this to over 400,000 cubic metres.

Product solutions include vegetable oils, industrial, food and feed, chemical, fertiliser, fuels, biofuels and base oils.

The company rebranded from UM Storage to UM Terminals in 2020 to better reflect the broad range of services the company offers its clients. It is part of the UM Group which has a distinguished history stretching back almost 100 years.

About UM Terminals

UM Terminals provides storage facilities for a wide range of products including vegetable oils, industrial, food and feed, chemical, fertiliser, fuels, biofuels and base oils.

For more information, visit www.umterminals.co.uk.



UNDERSTANDING NATURAL HAZARD RISKS TO YOUR SITE

The risk posed by Natechs (Natural Hazards Triggering Technological Accidents) needs careful consideration.



Natechs (Natural Hazards Triggering Technological Accidents) refers to accidents initiated by natural causes, including earthquakes, lightning and flooding, all of which have the potential to impact high hazard industrial sites. Major accidents have the potential for catastrophic consequences to people and the environment as well as business reputation and sustainability. Such natural hazards can both trigger major accidents and weaken safeguards in place to prevent, control and mitigate them.

For this reason, the risk posed by Natechs needs careful consideration.

Natural hazards can be broadly categorised as seismic, hydrological and meteorological (e.g. earthquakes, flooding and wind storms respectively) and will have different likelihoods, severities, warning times and consequences. Generally, natural hazards will impact widespread areas. Climate change also plays a role, typically increasing the likelihood and severity of hydrological and

meteorological events. An example of a Natech accident in recent history is the floods that occurred in Central Europe in August 2002. In total, 232 lives were lost and one site, in the Czech Republic, was struck particularly hard. Large volumes of chlorine gas were released from pressurised storage tanks. The flood itself was a one in five hundred year event and as such, the severity was unprecedented, with the hundred year water level of the site being exceeded by 1.3 metres. Whilst it may not be practicable or justified to implement safeguards for events of unprecedented scale and severity, consequences involving the loss of containment of hazardous substances are still possible during lesser events, highlighting the importance of robust safety measures. Since the consequences of Natech events are often severe, just being aware of them is not enough and the duty holders of hazardous sites must be proactive in their approach to understanding, assessing and managing the risk.

Risk reduction and preparedness for natural hazards is something which is often overlooked. There is a requirement under the COMAH Regulations and the Seveso directive for sites to understand their risks from natural hazards, with some other countries having specific laws/programs regarding the protection of people from earthquakes and/or tsunamis. There is however a shortage of dedicated methodologies and guidance for assessing and

managing Natech risks. In addition, for some natural hazards there is a limitation to the measures which can be implemented, and other measures may be deemed too costly, especially if considering the likelihood of the natural hazard event at the site versus a non-Natech major accident hazard event. Many measures in place to prevent a major accident hazard may not work in a Natech incident, meaning that crediting these barriers needs to be done with caution.

The use of hazard mapping, such as flood maps, may be useful for understanding the current risk, and can include inundation areas in the event of sea level rise and climate change. In New Zealand, GNS Science have provided vulnerability and evacuation maps to the government, authorities and private industry which focus on the possibility of a tsunami. The maps show the areas in the most danger and provide vital information for evacuation planning. These types of maps can also be available for other natural hazards such as volcanoes and can be used to help inform site emergency response plans, as well as the emergency response plans for the local authorities. It should be noted however that in a Natech event, there is a reasonable chance that emergency response teams would not be able to reach the site(s) requiring support. This may be due to damaged access roads, services being overwhelmed by the public, or the services themselves being affected by the hazard. This may

reduce the resources available to sites in an emergency and should be considered in response planning.

There is no 'one size fits all' when it comes to specific sites and hazards. Therefore, duty holders need to understand the risks posed by Natech events to their specific site and then ensure they are informed of what equipment may be impacted, how, and what to do in the event of a natural hazard. Although there may be a low likelihood, natural hazard events can often be a case of 'when' not 'if', and so we must be prepared for their eventuality.

About RAS Safety Consultants

RAS Ltd is an independent firm of risk specialists established in 1993. RAS are founded on a set of simple principles: recruit the best people in the industry, only work in our areas of expertise, and work with our clients, not for them. It's an approach that has seen them grow from being a handful of specialists in the North West to a rapidly developing company working with the leading companies in the oil & gas, pharmaceuticals and specialist chemical sectors across the world. The RAS team has worked on some of the biggest and most influential projects in the industry, and continues to expand their specialist knowledge.

For more information, visit www.ras.ltd.uk



STANLOW TERMINALS IS TRANSFORMING FOR TOMORROW AND IS READY TO LEAD THE ENERGY TRANSITION

**Michael Gaynon,
Chief Executive
Officer at Stanlow
Terminals,
discusses the
energy transition
and future
opportunities for
the bulk storage
and energy
infrastructure
sector.**

Michael Gaynon, Chief Executive
Officer, Stanlow Terminals



located on the south side of the Mersey Estuary, near the major cities of Liverpool and Manchester, Stanlow Terminals owns and operates the largest tank storage facility in the UK, with over 3 million cbm of capacity within its portfolio.

The UK's largest independent bulk-liquid storage terminal can boast unrivalled connectivity to domestic and international markets through road, barge and jetty connectivity, plus access to key national distribution pipelines such as the UK Oil Pipeline (UKOP) and the Manchester Jet Line.

The location is strategically significant, serving the UK energy corridor and including major population centres, key regional airports and accounting for 16% of national transportation fuel demand.

Stanlow Terminals has a clearly defined long-term vision to lead the charge in the development of changing energy infrastructure. Tell us more about your vision for the future.

Against the background of a changing energy industry and as we develop innovative ways of creating sustainable energy, the supporting storage and transportation infrastructure needs to evolve. At Stanlow Terminals, we are not only transforming for tomorrow, but we are ready to lead the energy transition. We are investing to create the UK's largest bio-fuels hub and playing our part to ensure that the UK can meet its Net Zero targets. Our strong geographical position and experience in the energy sector enable us to provide solutions based on the ability to safely handle energy products to meet the needs of society's Net Zero goal.

In this transformative journey, Stanlow Terminals is primed to lead the national charge in the storage and distribution of hydrogen by diversifying current assets to accommodate the UK's Net Zero target and by delivering in line with sustainability objectives through our multimodal logistics operations.

Stanlow Terminals operates at two locations, one being a deep-water terminal at Tranmere, which receives some of the largest vessels in the world via the Irish Sea, and the other along the banks of the Manchester Ship Canal, which provides excellent multimodal connectivity. The business can also call upon reliable road, rail and water links, along with connection to UKOP and the Manchester Airport Jet Pipeline.

And we are now set to expand our current operations through increased connectivity via road, pipeline, rail and shipping. These enhancements support our strategic objective to become the UK's largest bulk liquid storage and energy infrastructure solutions provider and complement the developing hydrogen economy. In this context, we are supporting HyNet by developing the storage and distribution facilities that will be required to provide a multimodal hydrogen transport hub.

The UK Government has set out its strategy to decarbonise the economy over the next 30 years and we are committed to playing our part in helping to achieve that. This vision for the future is shared with our sister company, Vertex Hydrogen, and our parent company, Essar: we are united in our goal to lead this transition.

Stanlow Terminals has also announced it will make investments over the next three years to develop the UK's largest biofuels storage hub. Tell us more about this project and how you see the UK biofuels market developing in the future.

Stanlow Terminals is developing the UK's largest new biofuels storage hub located in the North West of England which will deliver 300,000 cubic metres of capacity to support our customers in delivering the UK's Net Zero transition.

The new facilities at the Stanlow

Manufacturing Complex and Tranmere Terminal will allow customers to store, blend and distribute biofuels suitable for use in the energy transition including as drop-in replacement transport fuels for road, aviation and marine. While we already provide biofuels storage capacity for customers through dedicated supply and delivery infrastructure, this new customer-led investment will support the growth of initiatives such as sustainable aviation fuel (SAF), sustainable hydrotreated vegetable oil (HVO) and will include waste-based feedstock import facilities, blending and capacity expansion for existing bio-ethanol and bio-methanol.

Indeed, the market for energy from renewable sources in the UK is expanding rapidly, driven by legislative obligations to encourage lower carbon fuels. And these investments reflect the growing demand from both our partners and our customers seeking storage facilities and expertise in future fuels handling, as businesses across the economy look to decarbonise and operate in a more sustainable way.

Against this background, we have also completed the International Sustainability and Carbon Certification (ISCC) sustainability accreditation for our storage terminals. ISCC is a global leading certification for sustainability and traceability which aims to facilitate and improve the environmental, social and economic

aspects of sustainability in biomass value chains. Products which are certified ISCC are becoming a fast requirement in the current storage market.

We have a clear vision to further accelerate sustainability in the North West region and ambitious plans to embrace our strengths to deliver on this ambition. We are therefore fast tracking a number of developments to be able to support future change and are on target to meet our objectives.

At Stanlow, the company hosts a well-resourced infrastructure portfolio. As the bulk storage and energy infrastructure sector looks to the future, how can it ensure that the opportunities of tomorrow are seized?

In order to seize the opportunities of tomorrow, it is critical to always think ahead as well as to build successful partnerships to drive future strategies.

At Stanlow Terminals we have recognised important investment opportunities to expand on our current offering. In the longer term, accessibility into new markets will undoubtedly be at the heart of our strategy. Our aim is to lead by example: we want to both contribute to the growth of the North West of England, where we are based, and be recognised as global leaders in the low carbon energy sector.

What is your outlook on the global bulk liquid storage market?

As the breadth of products and services provided by terminals evolve, there are always challenges but opportunities too. However, working and thinking proactively are key to ensure that operators in the bulk storage and energy infrastructure sector are able to identify and solve problems early, as well as capture important opportunities in order to seamlessly support customers as their needs change.

For example, heated tanks for biofuels, as well as ethanol tanks, are still hard to find and in high demand. The transition to E10, from a storage and logistics perspective, has resulted in increased demand for ethanol storage to ensure supply can keep up with consumer demand. These tanks require specialist linings to avoid corrosion and to manage HSSE requirements. At Stanlow Terminals, we worked with coatings specialists to develop a suite of linings for multiple biofuel components to re-life existing infrastructure for these new greener fuels. This allowed the repurposing of unused infrastructure originally built to handle products like fuel oil.

It is therefore by working and thinking proactively that we identified an opportunity in this context and gathered regular market intelligence reports to ensure that we are best placed to meet our customers' needs today and as we look ahead towards our energy transition.

The company has a robust HSE management system in place

and has achieved ISO 45001 accreditation. Tell us more about this important recognition.

We are committed to meeting the highest standards in our environmental performance and, in May of this year, we were awarded the ISO 14001 Environmental Management System accreditation and the ISO 9001 Management System. This certification covers all of the environmentally sensitive aspects of our business, including how we manage and distribute crude products, refined petroleum products, petrochemical products and biofuels. As our business grows, protecting people and the environment will always be our top priority, and this accreditation provides independent verification that we have the right management systems in place.

For more information about Stanlow Terminals, visit www.stanlowterminals.co.uk

Author

Michael Gaynon is Chief Executive Officer of Stanlow Terminals. He has 21 years of experience in the sector, having previously held senior roles globally with Essar Oil, Shell and SGS.





Celebrating 20,000 Process Safety Champions

Responsible process safety training success has been achieved by over 300 UK and global high hazard companies, celebrating the fact that since 2010, 20,000 delegates have now adopted the Process Safety Management (PSM) industry framework training standards. Listed in the HSE COMAH guidance document, the PSM standards are benchmarked to COMAH / SEVESO III competence and compliance requirements - to help improve all businesses' operational integrity, safety and reduce the risk of a Major Accident Hazard to people, assets and the environment.

Developed for industry by the Process Safety Management Competence Programme Board, including representatives from the Health and Safety Executive, the PSM training standards are delivered by Cogent Skills, via the following 1 or 2-day courses:

- Process Safety Leadership for Senior Executives for Senior Executives and Board Members of major hazard facilities
- Process Safety Management Foundations for Managers, Supervisors, Safety Personnel, Senior Contract Employees and Junior Engineers
- Process Safety Management for Operations for Operators, Maintenance Technicians and Long-Term Contractors
- PSMO - Train the Trainer (License

to Train) deliver approved course content in-house under license

Peter Davidson, Executive Director of the Tank Storage Association, said: *"The TSA is an active member of the Process Safety Management Competence Programme Board. The work of the board in developing and maintaining training standards for process safety is critical in providing the tools necessary to allow business leaders, asset managers and operators to safely manage their plant and processes. These training standards have been developed jointly by industry, the Competent Authority and UNITE the Union, and the learning objectives within the standards represent the very latest knowledge and best practice. The TSA fully supports this important initiative and will continue to actively contribute as industry looks to the future."*

The 20,000 PSM delegates represent over 40 global major accident hazard sectors – from Chemicals, Nuclear, Energy, Utilities, Manufacturing, Upstream and Downstream Petroleum, to Explosives, Distribution and Storage, across the following site classifications:

- 36% Upper Tier COMAH
- 15% Lower Tier COMAH
- 49% Non-COMAH

For more information, visit www.cogentskills.com

BENEFITS OF NON-DESTRUCTIVE TESTING (NDT) FOR LEAD BASED COATINGS

Matt Wadie, General Manager of Integrity Support Solutions, discusses the benefits of non-destructive testing for lead based coatings.

[Matt Wadie, General Manager, Integrity Support Solutions Group](#)



Throughout the tank storage industry, there is already a well-established practice to undertake lead declassification of fuel storage tanks based on the Energy Institute "Guidance on the declassification of tanks previously in leaded gasoline service".

However, we often find that external coatings for tanks and associated pipework and infrastructure from a range of industries can also contain lead-based paints, often with a high lead content, which can be overlooked during project planning and works, potentially leading to non-compliance with the Control of Lead at Work Regulations 2002 and Health and Safety Legislation.

The Control of Lead at Work Regulations 2002 applies to any type of work activity, e.g., handling, processing, repairing, maintenance, storage, disposal etc which is liable to expose employees and any other person to lead as defined in Regulation 2, i.e., to:

- metallic lead, its alloys, and all

its compounds including lead alkyls; and

- lead when it is a component of any substance or material.

The lead must also be in a form in which it is likely to be:

- inhaled, e.g. lead dust, fume or vapour;
- ingested, e.g. lead powder, dust, paint or paste; or
- absorbed through the skin, e.g. lead alkyls or lead naphthenate.

Breathing or ingesting lead dust or fume from hot works can cause serious occupational ill health problems like kidney, nerve and brain damage or infertility.

What do employers/site owners have to do?

The Regulations require employers to:

- make a suitable and sufficient assessment of the risks to the health of employees created by the work to include whether the exposure of any employees to lead is liable to be significant;
- identify and implement the measures to prevent or adequately control that exposure; and
- record the significant findings of the assessment as soon as is practicable after the assessment is made.

As part of your legal duties and risk assessment, lead paint inspection and testing should always be

required as part of due diligence prior to maintenance works, repair, refurbishment or demolition of any structure, pipe, tank or surface that you own on site, unless you can prove that there is no risk or lead present. The duty the Regulations place on every employer to prevent or adequately control the exposure of employees to lead applies irrespective of the source of that exposure. For example, the exposure to lead may result from work with lead or leaded compounds being carried out by the employer's own employees, or incidental exposure arising from work nearby being carried out with lead or leaded compounds by another employer's employees.

Lead testing

Traditionally the method of sampling was to take a bulk sample of surface coating and submit it to an accredited laboratory, but this has a number of issues associated with it. The sample needs to be large enough to ensure sufficient analytical limits of detection can be reached, it needs to be full depth down to the base material, its time consuming in both the sampling and analytical turnaround and can be costly depending on the number of samples obtained.

Use of NDT lead detection instruments such as hand-held X-Ray fluorescence analysers can offer a range of benefits from rapid field testing with each sample

Use of NDT lead detection instruments, such as hand-held X-Ray fluorescence analysers, can offer a range of benefits from rapid field testing with each sample taking less than a minute, instant results and the ability to take full depth measurements through many years of coating.



integritysupport**solutions**



taking less than a minute, instant results and ability to take full depth measurements through many years of coating, without damaging the integrity of the surface material.

A full site register can be generated, from single survey, which contains all of the site assets containing lead-based coatings to enable the information to be available for any activity from simple works through to be included in any CDM or pre-construction information.

As X-ray fluorescence (XRF) spectrometry equipment becomes more commonplace, it is imperative to ensure that the users are familiar with the hazards and requirements of working with ionising radiation. XRF equipment can produce very high levels of radiation at the aperture, and it is important that the correct precautions are implemented to protect individuals working with or near the system.

Competence

Where paint or bulk material samples are to be obtained, care should be taken to ensure that the sample methodology is robust and has steps to prevent cross contamination of samples by cleaning the tools, using disposable materials and most importantly has a risk assessment in place to minimise the risk of lead contamination onto the workplace during sampling.

All sample analysis should be carried out by a laboratory that holds UKAS accreditation for lead analysis.

If the plan is to use an XRF analyser

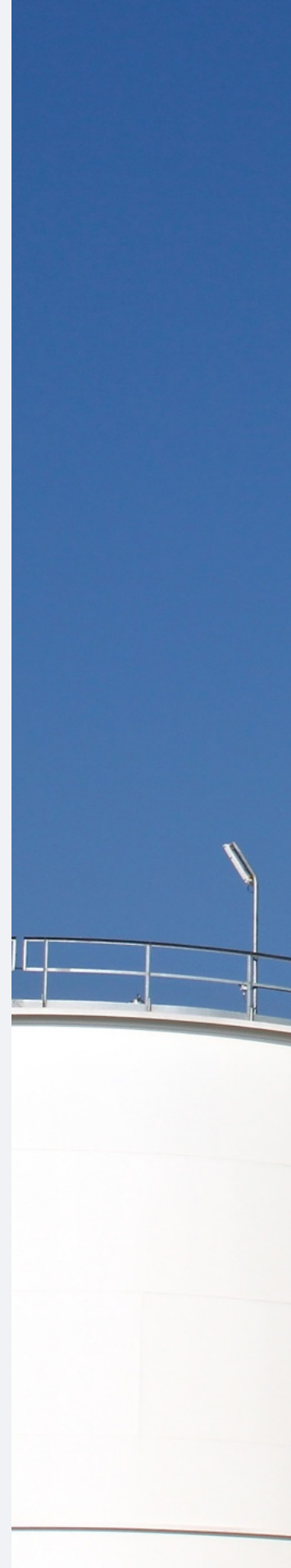
for NDT the user should be trained and also ideally be a Radiological Protection Supervisor as a minimum requirement.

Where advice is to be given with regards to possible occupational exposure and suitable and sufficient control measures then a competent Occupational hygienist should be contacted, via the British Occupational Hygiene Society Directory of Consultants. Integrity Support Solutions have a wealth of knowledge on the methodology required to support companies through their risk assessment process to assess where exposure to lead or leaded compounds may occur.

For more information, visit www.integritysupportsolutions.co.uk

Author

Matt Wadie is General Manager of the Integrity Support Solutions Group Ltd.



GRP – the alternative to steel grating

Marine applications create a wide array of challenges for construction materials. The salt air can cause corrosion resulting in accelerated wear on anything that is not highly resistant. In addition, the moisture can make surfaces slippery creating potential accident areas. Weight can also be an issue in dockside and marine settings, and GRP is a material that is light weight whilst still durable, and requires little in the way of maintenance.

Its resistance to corrosion and erosion, coupled with its light weight and anti-slip properties, make it an excellent material for the fabrication of platforms, walkways, and step-

overs in the fuel storage environment. GRP is UV stable, it is non-conductive, and resistant to most chemicals.

TSA's Associate Member JBP (a major supplier of Pipe, Fittings, Flanges and Valves) has long experience in the provision of fabricated access equipment, and holds the largest stocks of GRP grating and structural products in Scotland. From their Inverurie fabrication facility, JBP have produced a wide range of bespoke walkways, bund and drain covers, stepovers, landing platforms, mezzanines, and access stairs.

For more information, contact Kelly Thurston at kthurston@core-6.co.uk

[GRP marine walkway \(Image courtesy of JBP\)](#)



JBP
John Bell Pipeline

HOW NEW CAREER PATHWAYS WILL ENSURE BULK LIQUID STORAGE DRIVES OUR GREENER FUTURE

There has never been a more pressing need to give apprentices and employees alike transferable, future-proof skills to help move the bulk liquid storage sector forward.



There has never been a more pressing need to give apprentices and employees alike transferable, future-proof skills to help move the bulk liquid storage sector forward. Done right, we will see out the last days of any unnecessary fossil fuels while assisting the industry and its businesses in moving to a greener future.

To achieve this, we need to be a part of the UK's evolving energy solutions and pass on decades of our collective expertise to the next generation.

That way, we can play an essential role in the UK's future success story.

An urgent but exciting time

Correct implementation will guarantee the most exciting time I will have experienced in my 30-plus years in the industry. But, to truly make the most of our position in this change, both businesses and training providers need to create a runway which will equip our next generation of engineers and

operators with the right knowledge, allowing them to truly take off.

Why now? Because many with the wisdom and insight that has to be passed on have already retired, and potential recruits are skipping the sector entirely – enticed by offerings from “cleaner” green industries.

But despite successful overtures from fledgling green sectors, this brain drain causes problems for both the legacy of bulk liquid storage and the renewable energy providers. This is because although it is often called a green “revolution”, it is far from it. It has been a gradual, evolutionary process, and it will continue to be so.

Developing sustainable green technology has taken time, and much of it is still in its infancy – or at least some way off seizing its full potential. This gradual growth of technology (like carbon capture and hydrogen production), as well as different dependencies on fossil fuels, means that there will be no day when someone flicks a switch and everything is powered by green energy. This is as true for the UK's vast, varied facilities as it is for the fleets of vehicles on our rail and roads.

The reality is that although we need to make sure the next generation is well-equipped for the new energy era, fossil fuels are also going to be around for some time. There will,

though, be a transition between the two that will gain momentum. So, we need an army of apprentices to take the torch from our retiring generation in bulk liquid storage. We need them to shepherd the country – and those our storage solutions serve – from fossil fuels to a landscape that includes greater use of renewables. We need their vigour, drive, and commitment to help us shape our future and lead in this transition.

If the energy industry is not careful, this transition will be choppy at best: supplies of fossil energy products will struggle without well-maintained infrastructure. Likewise, major green projects will stall if their engineers and operators don't have the right competencies – green energy will need production, transportation, and storage, and with that, new skills to ensure these storage and product conditions are maintained.

Although green energy rightly gets positive press, this excitement is not always tempered by the reality that these new, world-saving fuel sources are often high-hazard products with increased risks if not managed appropriately. So, moving and storing this product needs at least the same level of expertise as its fossil fuel forbears.

Only generations of understanding, then, can prepare for the challenges that come ahead. Innovation

shouldn't be built on hope and naivety. It should be delivered on the back of sound technical understanding and built on the shoulders of hard lessons many have learnt to great cost in years past.

The solution

To get there, we cannot work as we have always done. We need to think differently.

As an industry, we need to create a standard pathway of qualifications to build a competent workforce. These qualifications will see people unchained from narrow specialisms and free to share universal expertise as their career inevitably moves from a starting point working with more traditional fuels and chemicals to something well-calibrated for Net Zero.

The new generation of apprentices is more transient. It didn't grow up with 'jobs for life', and has to be more loyal to bright, inspiring ideas than tried-and-tested, handed-down notions. The technology they grew up with was obsolete before they left school, and the fuels they will be working with haven't been fully determined or even endorsed yet at a government level.

But we can pass them our knowledge, our competencies, and our craft: a craft in setting out procedures, appreciating safety, and applying good problem-

solving know-how built on the fundamentals of process safety. Something that will put young people in a strong position for life. Providing apprentices with industry-spanning qualifications will allow our young people to do one other thing: challenge the status quo many of us helped shape. At the dawn of green energy, we will teach them the rules so they can reshape them. Perhaps the reason why no green energy fuel type has been singled out as the "way forward" by the government is that none have enjoyed runaway success... yet! Only people with technical insight, who change what we think is possible, will be able to make the necessary leap beyond convention.

The way ahead

The first steps towards this future have been taken. Cogent, the TSA and other members of the industry are building on excellent qualifications like the Level 2 Diploma in Bulk Liquid Operations and Level 3 Diploma for a Bulk Storage Operator Technician – developing national occupational standards (NOS) for production, storage, and distribution of hydrogen.

Underpinning this must be a clear apprenticeship pathway that attracts talent but also gives career structure beyond that provided by individual organisations. That way, we can ensure bright minds have a bright future in our industry at a

time of major change. But all this needs buy-in at the right levels of the industry.

We must do this now

Convincing the world we needed renewable energy sources took decades. Those were decades of lost time when we could, as an industry, have been in a position to transfer our know-how. As it is, some of the biggest green initiatives and projects are only just getting underway, and some haven't even happened yet.

We need to focus our efforts as a sector looking to the future. Engineers, operators, planners and project managers understand this. The specialists working at the face of the energy transition know they need the talent to put wind in their sails.

It's the next levels of leadership that need to be inspired now: at the corporate level, heads of industry must be made aware of the time, effort and finance needed. They must get the message urgently and release the shackles often placed on senior leadership teams to invest in

our future. They need to incorporate it into their vision and strategy as soon as possible.

Apprentices cannot be seen as just another cost; they need to be seen as an investment, an asset that will, if nurtured correctly, reap dividends and drive the sector forward as we transition – because the cost to the wider industry is greater if we do nothing to train them now, and the environmental cost, because of lost time, could be irreversible.

About Reynolds Training Services

Health and safety isn't expensive, it's priceless. Developing the knowledge and skills of workers, after all, manages the day to day risks which are central to your businesses' prosperity. That's the approach we take at Reynolds Training Services when helping workplaces and industrial sites create fully compliant environments. Good workplace safety, after all, doesn't happen by accident.

For more information, visit www.reynoldstraining.com



UM Terminals appoints new Managing Director

One of the UK's leading bulk liquid storage specialists has appointed a new Managing Director.

Phil McEvoy takes up the role at UM Terminals after having held several senior roles in the UK and Europe. Most recently, Phil was Operations Director for the UK, Ireland and Northern Europe at global chemicals distributor Univar Solutions. Prior to that he was Group Operations Director for Argent Energy, a specialist in renewable fuels. He has also previously been responsible for Engineering and Asset Management at Manchester Airport Group. Phil replaces Vic Brodrick who has been combining the roles of Interim Managing Director and Commercial Director since the summer. Vic will continue as Commercial Director.

Phil, a chartered mechanical engineer, said: "This is an exciting time to join UM Terminals. While we are not the biggest company in our sector, we believe our unrelenting customer focus, ability to flex and add value sets us apart. We are also committed to the storage of a diverse portfolio of products, a portfolio that will continue to evolve as we meet the requirements of our customers, not least in the area of energy transition."

A recent example of the company meeting the needs of one long-term

customer in the chemicals sector saw UM Terminals invest in the region of £2 million, enabling the Scandinavian-headquartered client to take a much larger tank that was specially converted to store and blend a range of AdBlue NOx reduction products.

UM Terminals operates out of 8 terminals, strategically located across the UK, handling over 40 different products. It has its head office in Liverpool. It currently has a capacity of over 300,000 cubic metres of bulk liquid storage, but the plan is to grow this to over 400,000 cubic metres. Product solutions include vegetable oils, industrial, food and feed, chemical, fertiliser, fuels, biofuels and base oils.

Phil added: "We are carrying out a strategic review of our assets, ensuring they are best able to continue meeting the requirements of our customers today and in the future with further investment being made where appropriate. UM is ideally placed to serve customers across multiple sectors due to the strategic location of our terminals, excellent transport links and range of storage options."

For more information, visit www.umterminals.co.uk.

MOBILE AND ENVIRONMENTAL-FRIENDLY EMISSIONS REDUCTION SERVICES FOR EVERY APPLICATION

No-worry package for degassing, turnaround services, nitrogen services and rental of a remote-controlled robot for tank cleaning.

Kai Sievers, CEO and founder
ENDEGS Group



Reducing industrial emissions requires modern and reliable technologies. That is why we at ENDEGS have specialised in various environmentally friendly services and offer a worry-free all-in-one package when it comes to industrial emissions reduction! Our aim is to see that fewer emissions that harm environment and people get into the air. We further want to contribute to reducing the global greenhouse gas footprint. In 2008, we have developed the first fully equipped, autonomously operated, trailer-mounted vapor combustion unit (VCU) world-wide – thus, making mobile emissions treatment possible for the first time ever. More than 15 years of experience have given us the necessary expertise for the degassing of VOCs (volatile organic compounds) and HAPs (hazardous air pollutants). The various ENDEGS services also include the degassing of a broad range of components during refinery turnarounds as well as the mobile nitrogen services for liquified gases under pressure. We further rent out the remote-controlled ATEX Zone 0 robot for safe tank cleaning.

Degassing solutions for every use case

The ENDEGS mobile vapour combustion units burn all kinds of gases, gas compounds and vapours of the hazard groups IIA, IIB and IIC with a combustion rate of more than 99,99 % and no open flame – making us the only company operating in Europe being able to do so. We have successfully carried out more than 1.400 degassing projects internationally and offer the degassing of all types of containers, tanks, pipelines, ships, inland barges and vessels. Some of those projects have lasted up to three years and involved the degassing of hundreds of components. ENDEGS operates mobile combustion units with four different combustion powers – 3, 5, 10 and 20 MW –, so that they can be used in different scenarios and applications. The 3 MW unit, for example, is ideally suited for short-term projects and emergencies, while the units with a larger combustion power are able to burn more complex products at a high efficiency.

Degassing of 80 equipments simultaneously

The ENDEGS mobile vapor combustion units are also ideally suited for degassing projects during refinery turnarounds. We can degas all types of components on Seveso sites like vacuum trucks, mobile liquid storage tanks, decanters and more. During the degassing carried out by ENDEGS, downtimes of the facility

are reduced to a necessary minimum and daily operations can continue undisturbed or with only minimal interference. Our VCUs are also capable of replacing vapor recovery units (VRU), vapor treatment systems and flares in refineries temporarily so that there are no interruptions of operations and business for our customers during a downtime – whether it be caused by malfunction or regular maintenance – of a vapor treatment system.

Over the summer 2022, we have carried out one of our biggest projects yet – in fact, when it comes to the number of materials we used, it was probably the biggest ENDEGS project so far. For over two and a half months, we carried out the degassing of a broad range of columns, heat exchangers, mobile liquid storage tanks and more – degassing around 80 equipments simultaneously. For this project during a major turnaround, we used a total of three VCUs: two units with a combustion power of 10 MW and one with 5 MW. We also applied a total of 1,9 km of piping.

Mobile nitrogen services for liquified gases

Since the beginning of 2022, we have added a fleet of mobile vaporizers with nitrogen tanks to our portfolio. The vaporizers are ideally suited to purge and render inert systems and system components handling flaming liquids and gases. Therefore, our nitrogen vaporizers are ideally suited for working with liquified gases

under pressure – complex products like LNG/CNG, hydrogen, ammonia or butane.

With our vaporizers, ENDEGS can offer nitrogen services for tanks, ships, barges, vessels and pipelines. Recently, for example, we carried out the degassing of inland barges containing butane and ammonia to prepare them for regular inspection and maintenance. For these projects, we used a combination of a mobile vapor combustion unit and a nitrogen vaporizer. The challenge when working with those pressurized products is that an efficient degassing and purging process with a minimal usage of N₂ is necessary. The ENDEGS nitrogen services can provide just that!

Rented ATEX Zone 0 robot as safe alternative to manual tank cleaning

ENDEGS further rents out the ATEX Zone 0 robot for the cleaning of industrial tanks. The robot as a rental service enables a safe cleaning in the dangerous ATEX Zone 0: it is remote-controlled and can be operated from a safe distance. Previously, when cleaning industrial tanks manually, employees had to work in this hazardous area and, despite safety suits and masks, were exposed to a significant health risk. Compared to manual cleaning, leveraging the remote-controlled robot for tank cleaning is not only safer, but much more efficient and cheaper as well. The operator controls the robot out of a cabin via a control panel with two

joysticks and a monitor shows every movement of the ATEX zone 0 robot in real time.

Due to its small size, mobility and versatile robot arm movements, the ATEX Zone 0 robot can be used in many industries for a wide variety of materials. For example, the robot can be used, among many other applications, for:

- pit cleaning,
- petro-chemical cleaning,
- chemical cleaning,
- decommissioning cleaning,
- cesspit and septic tank cleaning,
- vacuuming applications.

We at ENDEGS rent worldwide and take care of getting the equipment to and from the site – wherever it is. Our personnel can also train the customer's operators on-site. The work itself is carried out by the customer.

About ENDEGS

ENDEGS is the European expert for the mobile and safe degassing of tanks, containers, tank cars, pipelines, ships and suction trucks in Europe.

For more information, visit www.endegs.com



The voice of the bulk storage and energy infrastructure sector



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