

TANK STORAGE AWARDS: THE WINNERS OF 2020

This year's Global Tank Storage Awards was one of the last events before corona virus restrictions came into force across the globe. Find out more about why this year's winners deserved to be recognised for their achievements in safety, sustainability and innovation



> DESPITE the challenging circumstances nearly 200 attendees gathered at Rotterdam's Floating Pavilion on the 10th of March for the fourth edition of the awards ceremony, celebrating excellence within the terminal industry.

The evening honoured the sector's high achievers, recent innovations, emerging technologies, environmental breakthroughs, and leading ports and terminals.

Tank Storage Magazine caught up with the winners to share their achievements...

CLH Group

TERMINAL EFFICIENCY

CLH Group

Spanish company CLH Group was founded close to 100 years ago and has grown into an international leader in the transportation and storage of oil products.

CLH was recognised at the Global Tank Storage Awards for its terminal efficiency processes, which has seen it implement advanced technologies and renewable energy systems across its terminals.

Gorki Penalva, assistant manager of logistics services at CLH, says innovation and safety were at the core of its business model, and the company's overarching goals were to maintain operational excellence while

developing new services and promoting international expansion.

'We are preparing the ground to become a data driven company, so that we can make strategic decisions based on data analysis and interpretation,' he says. 'For example, we've carried out individualised analysis of our equipment to establish customised maintenance protocols for each piece of equipment, optimising life cycles and performing more efficient maintenance.'

Penalva noted that one of CLH's most exciting technological advances over the past couple of years was the improvements it has made to the SCADA system, a powerful computer tool that enables the company to manage more than 4,000km of pipelines in Spain by satellite.

'The new SCADA is more agile and flexible and allows our specialists to centralise a wide range of tasks. It is also a safer system, as it incorporates the latest software updates that protects it against cyber attacks,' he says.

Another recent development has been the implementation of a digital delivery note system, which allows road tanker drivers to download loading operation documentation onto their mobile devices rather than having to print them out.

On the environmental front, CLH has been working at making its operations carbon neutral by 2050, powering equipment with solar energy and using other renewables for electricity generation.

It recently signed an agreement with American company Plug Power to use

hydrogen in its work towards creating a zero emissions solution, while forming an agreement with the Spanish Association of Oil Product Operators to promote the development of low-carbon liquid fuel.

'We're also working on a 'from waste to resource through recycling' project in cooperation with a cluster of companies across various industries, acting as a research leader for obtaining fuel from urban plastic waste,' Penalva explains.

Penalva says the company was thrilled to receive the Terminal Efficiency Award because it felt it recognised the strategies CLH had implemented and gave it further incentive to continue to improve on its work.



Sprague Energy

SUSTAINABLE IMPACT

Sprague Energy

For 150 years, Sprague has been working in the energy industry and is one of the largest independent suppliers of fuel, natural gas and electricity in the north-eastern US.

Sprague has a large regional network of terminals and was recognised at the Global Tank Storage Awards for the sustainable impact it has been making by implementing solar tanks across its network.

Sprague's first solar tank system was installed on the top of a former storage tank, and now produces nearly 100,000 kWh/year in power, while reducing the

energy demand and related costs for the terminal by about 10% per annum.

'The panels are less than half an inch thick, lay flat to the surface, and can be walked on, so there's no impact to daily operations,' explains Jay Leduc, managing director of health, safety, environment and sustainability at Sprague.

Aside from reducing greenhouse gas emissions, Sprague says the technology has allowed for operators to lower costs while increasing the value of its existing assets.

The company says although so far it has implemented its solar tank technology solely within its own terminal network, it plans to expand throughout the industry.

'Particularly, we want to work with other companies interested in saving costs, reducing their environmental footprint, and producing renewable energy for use

either on-site or selling onto the electrical grid,' says Leduc.

'With the tremendous amount of space available on the roofs of storage tanks, terminals have the opportunity to become very large clean energy power plants while continuing to support their existing and future storage business.'

He says it was vital the terminal sector was seen as a supporter of sustainability efforts, working to change attitudes some may have towards the industry.

'The more we can do as an industry to promote our sustainability efforts, from solar tanks to wind energy, biofuels and beyond, the better the public will understand the work being done to provide essential services and products in an even more sustainable manner,' Leduc says.

Sprague is in the process of creating two more solar tanks at its terminal near Albany in New York state, and when installed, the technology is anticipated to offset the entire annual electrical demand for the facility.

Along with its solar tank technology, Sprague is also investing in giving back to the community through charity work, offering low carbon fuel options, employing a diverse workforce, and creating innovative technologies.

Sprague says it was honoured to win the Sustainable Impact Award and to be recognised by industry peers.

'We hope our efforts help others see the sustainability value of solar tanks.'



Fujairah Oil Terminal

SAFETY EXCELLENCE

Fujairah Oil Terminal

The Global Tank Storage Award for Safety Excellence this year went to the Fujairah Oil Terminal (FOT) which is located in the United Arab Emirates.

The judges said the terminal demonstrated an impeccable safety record, specifically when it came to implementing safety procedures and minimising lost time, while it also had exhaustive strategies in place for both personnel and assets.

The award recognises FOT's commitment to create and practise a well-developed safety culture throughout its operations.

'We consistently work to explore new ideas for implementation and strive to always remain pioneers in safety measures,' says Cliff Shi, Managing Director at FOT.

FOT operates 24x7 and has a capacity of more than 1 million m³ across 36 storage tanks.



TANK STORAGE AWARDS THE WINNERS OF 2020

The terminal has made many safety improvements over the past year, including the implementation of board-level QHSSE (Quality, Health, Safety, Security and Environment) visibility.

'We've also adopted digital innovation to enhance safety performance, improved ergonomic solutions to reduce personnel injuries, installed a new high-level security surveillance and remote monitoring system, and implemented a shareholder audit system,' says Muthukrishnan Pattabiraman, the QHSSE manager at FOT.

Focused on keeping its terminal workers safe, FOT developed an Integrated Risk Management procedure and assessment, which communicates all

risks and appropriate precautionary measures to the employees and other related parties.

'FOT has been constantly encouraging its staff to identify and report what we deem to be 'high potential incidents' which has helped to drastically reduce the recordable incident trends from the commissioning,' explains Shi.

This management of potential risk can be seen in the way FOT has handled the coronavirus pandemic, with proactive measures driven by Shi.

'Shi closely monitored the virus' development in China and made sure to prepare our terminal and our employees to take all protective and preventive measures early on and well before

it started spreading in our region,' explains Malek Azizeh, commercial director at FOT.

Azizeh adds FOT regularly reviews its current operational practices, sources of different exposures and mitigation measures to minimise the external exposures.

'We provide training to our staff, instantly updating colleagues on any developments, while adopting a work from home policy. We've also developed and implemented a dedicated Covid-19 Impact Management Procedure that focuses on preventive measures, eliminating employee exposure to external parties and back-up system for the business continuity,' says Shi.

UMF

PORT INNOVATION

UMF (Union Maritime et Fluviale de Marseille Fos)

UMF was recognised at the Global Tank Storage Awards for its Smart Ports technology – a cargo intelligent system that connects different logistics business to improve processes, tracking, security and competitiveness.

Smart Ports uses Blockchain technology and artificial intelligence to send real-time information to users' mobile devices. The client-focused and intuitive system is reducing business administration costs while optimising cargo flows.

By digitally connecting all port and logistics players, Smart Ports focuses on managing information through early notifications which are traceable and secure, giving customers efficient service.

Marie-Hélène Pasquier, general secretary at UMF, says the company was highly-experienced in developing new solutions dedicated to logistics, and had been working on IT innovation for more than 30 years.

'The Smart Ports system is undoubtedly a major asset for innovation, namely in regards to the digital and circular economy,' she says.

The Smart Ports technology features two systems – the Cargo Community System (Ci5) and the Port Call Management Application (Neptune) which are digital services for both ships and cargo.

Ci5 was developed by data company Marseille Gyptis International (MGI), and works by connecting all port players and tracing all cargo statuses to improve processes.



'Ci5 creates better port fluidity, enhanced productivity and improved supply chain monitoring,' says Pasquier.

Neptune is a digital app created by Grand Port Maritime de Marseille that manages ship calls while coordinating port services and supplies.

Ci5 and Neptune are interconnected and work together to create a flawless information flow.

Pasquier says feedback from within the port industry has been very positive, and UMF had now created an annual event to connect with other port communities to discuss further changes in the logistic and supply chains.

'We launched a pitching contest last year for start-up companies to uncover new ideas and concept, involving those who

participated in the Petrochemical Global Logistic Convention,' she explains.

UMF has signed partnerships with incubators and accelerators to embrace further technological advances and is part of the 'Smart Port in Med' collective which works at launching new digital projects.

Pasquier says one positive to come from the coronavirus situation was that it will encourage more people to embrace digital tools. Like all ports around the world, Marseille-Fos has been affected by COVID-19 but the port was still 100% operational, functioning under specific measures.

'Thankfully Smart Ports allows equipped facilities to pilot their supply chain from their office or at home, without the need for transport or handle paperwork,' she says.

Reynolds Training

RISING STAR

**John Reynolds,
Managing Director at Reynolds Training**

The Rising Star Award is presented to a person who is paramount to the success of their company and who has the potential to become a key contributor to the tank storage industry.

This year, the award was received by John Reynolds, managing director of Reynolds Training – a business that provides training, competence assessment and management for the bulk liquid and gas storage sector and associated industries.

Reynolds Training provides an effective training platform across a broad range of technical and academic subjects and is actively nurturing the next generation of tank professionals through its apprenticeship programme.

Reynolds says he believed the company's point of difference was their experience blended with a willingness to listen and learn from industry, and



that it isn't shy in investing in the latest training technologies.

'We communicate clearly with our clients and work closely to help them achieve their training vision,' he says.

'We support our training with additional investment, expanding the plant at our HQ in CATCH this sees us bringing in the latest of systems from Honeywell.'

Reynolds says his proudest achievement to date was starting the company's

apprenticeship programme. The training links the industry to trade bodies and was a culmination of two years of hard work, involving the development of new qualifications and training material.

'Watching the apprentices grow over a two-year period is amazing, and so too is knowing we provided them with the first steps in what can be an exceptionally rewarding industry, while giving them many career pathways to follow,' he says.

Reynolds acknowledges like with all businesses, the global pandemic has affected Reynolds and caused the company to evaluate its delivery methods. These include locking down and working from home while embracing new technology to ensure companies can maintain the same level of regulatory and technical knowledge and skill.

'Our future goals as we move forward are clear – finalise the plant expansion, embrace new training delivery methods, recruit for cohort 2 for the science and manufacturing bulk liquid terminal technician apprenticeship and work with our clients, past present and future to assist them with their training and competence delivery requirements,' he says.

TEPSA

OUTSTANDING
ACHIEVEMENT**Nuria Blasco,
General Manager of TEPSA**

The Outstanding Achievement Award winner was selected by the tank storage market and this year Nuria Blasco was chosen, based on her role in the growth in TEPSA's storage activities.

Blasco is proud to have been with TEPSA for more than 20 years. She started as a technical and health and safety officer and says she has thoroughly enjoyed working her way up to her current position in the company.

Blasco believes the award acknowledges not only her work, but that of the 'outstanding TEPSA team'.

'The prize belongs to all the 150 dedicated professionals, who work hard every day. It's their effort, involvement and enthusiasm that made this possible. I'm very proud of the people I lead, and I'm incredibly grateful to them,' she says.

Last year saw record turnover and profits for TEPSA, with positive performance across its three business lines – chemicals, biofuels and fossil fuels. The company also renewed its top management with terminal leaders who Blasco says have 'extensive knowledge of the sector'.



'We have defined the 2020-22 plan and strengthened our client portfolio, promoting the hub and industrial terminal model, combined with traditional distribution at the four ports. The first phase of expansion at the Tarragona terminal is now operational and we have already managed to contract 100% of its capacity,' she explains.

Blasco says health and safety is always a number one priority for TEPSA, especially during the COVID-19 outbreak, but that the economic future of companies and individuals was also paramount.

'We need to make a common effort, with common policies to help the entire world overcome this crisis. The world, as a whole, needs help from governments. So, what can we do? Spread this

message: first, health and safety; next, financial help to overcome this situation,' she says.

Sustainability is crucial in TEPSA's business, and Blasco describes this as 'essential in the long-term for businesses like tank storage'.

As a board member of The Chemical Business Association of Tarragona (AEQT), Blasco is not unfamiliar with sustainability work. AEQT was formed as a committee to contribute to the sustainable development of the chemical sector in southern Europe.

'We need to minimise our environmental impact while also reducing our energy consumption. It's also important for our organisational and financial structures to be streamlined and sustainable,' she explains.

Tecam

ENVIRONMENTAL PERFORMANCE

Tecam

Tecam was recognised at the Global Tank Storage Awards for its dedication to environmental performance and work in making companies safer and more efficient.

The Tecam provides environmental technology for the petrochemical, pharmaceutical, chemical, oil and gas, automotive and packaging industries, by treating air impurities and reducing industrial waste pollution.

For its Environmental Performance Award, Tecam was recognised specifically for its integrated system for vent gas treatment at the Port of Rotterdam which has seen a 99.9% reduction of polluting emissions.

This means 13,860 tonnes of Volatile Organic Compounds (VOC) emissions will not be released into the atmosphere. As a further win, the technology was implemented without interrupting any terminal operations.

Bernat Sala, Tecam's CEO, says Tecam was pleased to win the award, as the company was working towards creating



an industry with less pollution, while making operations more cost-effective.

'We are focused on customised solutions for emissions and hazardous waste treatment aimed at helping companies in different sectors manage their environmental needs,' he says.

Koole Tankstorage Minerals (KTM) one such company to contact Tecam for its assistance in reducing its emissions through Tecam's vent gas treatment process. KTM wanted to eliminate the vapours and odours generated during barge and ship

offloading for tank farm filling purposes with fuel oil, vacuum gasoil and class-3 blend components.

'Once the problem and all its variables were analysed, Tecam proposed a custom-made Regenerative Thermal Oxidizer (RTO) as the most optimal solution, taking into account the volume, nature and characteristics of the emitted vapours,' Sala explains.

Tecam says its technology had not only been well-received by KTM but by many within the tank storage sector and it says it will continue to roll out its technology solutions to other ports around the world.

'We are expanding internationally, especially in Europe and South East Asia,' Sala says.

Like with many businesses, Covid-19 is slowing down business growth plans and Tecam's production unit is currently closed until further notice. However, Sala insists this will not affect the development of ongoing projects since its team can work off-site.

'Our team is continuing to provide remote support to our customers, answering questions that may arise in the development of ongoing projects. Our commitment is to mitigate, within our possibilities, any potential impact on operations with our customers while keeping our people safe and sound,' Sala explains.

Toptech Systems

TERMINAL OPTIMISATION

Toptech Systems

The Terminal Optimisation Award is given to a business that has provided software, a service or model that succeeds in optimising, streamlining or improving storage terminals around the world.

At the 2020 Global Tank Storage Awards,



the Terminal Optimisation prize was awarded to Toptech Systems for its Synetics business intelligence tool, which allows users to easily analyse detailed facility data.

Toptech Systems says Synetics empowers facility managers, allowing them to easily make effective changes to their operations, while giving them the opportunity to spot trends and investigate unusual activity.

Product manager at Toptech Systems, Annelies Godefroit, says data management is critical for terminal optimisation, whether analysing customer, transaction or load rack data.

'Having organised, accurate customer data is directly connected to the level of customer service the terminal is able to provide. It has far reaching effects such as the amount of time between contract signing to first truck load, the customer's ability to load, and the terminal's ability to readily find important documentation,' she explains.

Through Toptech's suite of products, terminals are able to put accurate transaction data at their fingertips, which improves the speed and accuracy of billing and the terminal's ability to track

product. With this clear and easy-to-read information, safety and efficiency of loading processes are also improved.

Godefroit says the company's technology has been in demand because the terminal market is in need of improved access to the data surrounding its operations.

Toptech Systems' other software, Load2day, has changed the customer data management process with a self-serve data maintenance model. Terminal customers use the tool to enter in their own data and this is then sent to the terminal management system.

'This greatly reduces manual data entry and makes on-boarding new customers a breeze,' Godefroit explains.

Toptech's newest terminal management system is the TMS7, which like the TMS6 model, automatically collects transaction data and sends it to the host system, providing greater data accuracy.

Acknowledging Toptech's win, Godefroit says it motivates the company to continue its hard work.

'We pride ourselves in solving the problems of tomorrow and driving the industry towards greater efficiency,' she says.

Diakont Advanced Technologies

EMERGING TECHNOLOGY

Diakont Advanced Technologies

The Emerging Technology Award was given to Diakont this year for its tank inspection tool that can be used remotely, analysing tanks for leaks with its robotic crawler technology.

'We aimed to meet these core design criteria with the technology: certified explosion-proof equipment, non-destructive evaluation that is better than out-of-service methods, ensuring high reliability, and having minimal or no effect on on-site operations,' says Edward Petit de Mange, managing director at Diakont.

The robotic technology was designed after Diakont realised a gap in the tank storage inspection market. Petit de Mange explains that over the life of the tank, most of the structure can be easily inspected, such as the roof, shell and seals, but many operators struggled to easily inspect the floor condition of the tank.

'Yet our technology allows operators to conduct quick assessments, or complete floor inspections – and to do so while the

tank remains filled and in operation. It is used to appropriately-prioritise their tank maintenance schedule, and also to extend the inspection interval on tanks in good condition,' he says.

The inspection tool accesses the condition of the storage tank floors, checking, measuring and characterising metal loss and coating damage on both the product and soil sides of the tanks.

Through its 3D sonar technology, the crawler is able to safely and efficiently navigate the area during tank floor inspections, while reducing the risk for personnel having to enter the tank, saving both time and money.

'Any technology that safely and effectively takes humans out of harm's way, especially eliminating human entry to hazardous confined spaces – that's a big win for our entire industry,' says Petit de Mange.

When using the technology, a Diakont field team member launches a remotely-operated, certified explosion-proof robot into the tank, and completes a fully-encoded high-resolution magnetic flux leakage and ultrasonic testing inspection of the entire accessible tank floor.

'It does this without requiring any manned entry, without having to drain the tank and take it out of service for weeks, and while also substantially



reducing VOC emissions. Particularly when implemented at a facility using a risk-based inspection program – the cost savings for the tank operator can be staggering,' Petit de Mange explains.

He adds the technology is driving a paradigm shift for tank operators.

'Running a facility's tank integrity program can historically be a little like playing a card game against your tanks – but now our technology lets you see their cards. It can have a major impact on the facility operator's bottom line,' he says.

TWTG

OUTSTANDING ACHIEVEMENT

TWTG

The 2020 Global Tank Storage Award for Innovative Technology was presented to TWTG, industrial Internet of Things (IoT) technology company, for its innovative NEON product line.

NEON is an ATEX (ATmospheres Explosible) / IECEx (International Electrotechnical Commission Scheme for Certification) zone 1 industrial IoT range of products for the oil and gas storage industry. This means the NEON range is certified to be used in hazardous and potentially explosive environments.

TWTG has deployed its NEON sensors at the Vlaardingen Vopak Terminal in the Netherlands, retrofitting them on top of existing manual quarter-turn and multi-turn valves to determine and communicate whether a valve is open or closed. The range has seen strong uptake and in response, TWTG is expanding within the oil and gas, petrochemicals and other industries.

NEON products can wirelessly connect



via LoRaWAN (Long Range Wide Area Network), are battery-powered and feed into existing distributed control systems. This allows operators to remotely access data about the valves from an interactive dashboard.

'Having this reliable information available is the essence of good decision making to ensure safety in working environments, especially in industrial sites,' explains Goran Gavric, CEO of TWTG. 'As a result, businesses will run more efficiently and operations will be streamlined.'

The complete NEON product line provides a number of different condition-based monitoring systems, such as the NEON Vibration Sensor, giving what

Gavric describes as 'granular insight into existing assets such as pumps and valves'.

'Our products put the focus on safety – for example the valve sensor checks and verifies whether valves are open or closed, so spillage due to human error can be reduced. This is an advantage economically, but also a bonus from a safety perspective as workers are operating these valves,' he says.

Gavric adds the products are 'incredibly well-engineered' and fill a gap in the market that hasn't previously been possible before due to cost.

'NEON products are retrofitted on top of existing infrastructure, making them more sustainable while lowering the total cost of ownership,' he explains. 'Oil and gas companies aren't likely to replace billions of Euros worth of equipment for added technology insight, but by being able to place it on top of existing infrastructure saves these companies a lot of money.'

Gavric says TWTG was pleased to win the Emerging Technology Award as it recognised the benefits the company's IoT technology is bringing to the oil and gas industry.

'It makes us, as a striving company, very proud, but it also verifies our position in the market,' he says.

Re-Gen Robotics

SAFETY TECHNOLOGY

Re-Gen Robotics

Within less than a year of launching, Re-Gen Robotics won the Safety Technology Award. Tank entry is widely recognised as being one of the most hazardous operations in the tank cleaning business and every year as many as 200 people across Europe, lose their lives working in confined spaces. Traditionally personnel have been required to enter hazardous oil tank environments to implement inspections, de-sludge and clean for product change.

Re-Gen Robotics' automated robots, in combination with competent staff, eliminates confined space entry, cleans safely, with precision and efficiency.

In Spring 2019, Re-Gen Robotics launched the first and only Zone 0 EX Certified, remote-controlled, 'No Man Entry' robotic tank cleaning company in the British Isles. The company invested £2.5 million in creating three purpose-built, Ex Zone 0 rated robots. The large robots are designed to fit through a standard 600mm entry hatch via an extending ramp and desludge, wash and clean large-scale tanks, including fixed



roof and floating roof tanks. The robot has the power to clean the largest oil tanks with no hassle and can handle heavy fuel oil, crude oil, sludge and the like.

The robots are designed to operate in the most inhospitable environments and with specialised access cranes, remote camera systems and engineering expertise, any size or shape of tank can be cleaned.

Re-Gen Robotics' unique, closed-loop cleaning system can reduce cleaning time by up to 45%, significantly decreasing downtime and loss of production whilst oil tanks are not operational.

At no time during the Re-Gen Robotics cleaning process is there a requirement

for human presence in the confined storage container. The company's technical operator remains a safe distance away in the Zone 1 control unit, where they can monitor activity and progress, through a series of ATEX cameras fixed to the robot, inside the tank being cleaned. The unique features of the large robot make it ideal for cleaning the storage tanks. A combination of specially designed 3,500 PSI jetting water nozzles, powered by a high-pressure low flow pump, play a vital part in the cleaning process.

The auger system at the front of the robot breaks down heavy sludge without the requirement to use water, thereby generating less waste. Sludge is then extracted by an ADR certified jet/vac tanker with 4,800 C/ m³ per hour vacuum capacity.

The entire tank cleaning operation is recorded on CCTV from the ATEX cameras and is made available to the client upon completion of the works. All files are date and time stamped to ensure the process is traceable for auditing purposes. A record of gas detection readings is also issued on completion of each vessel cleaning, produced by the onboard gas monitoring equipment. Re-Gen Robotics is providing a realistic and proven alternative to 'man entry' tank cleaning.

**TANK STORAGE/
NEW CONSTRUCTION**

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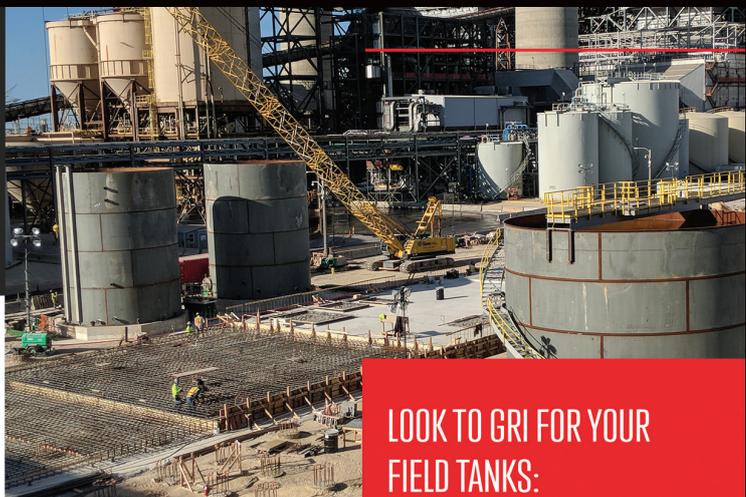
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