



INSIGHT



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

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PROCESS SAFETY LEADERSHIP – WHAT HAVE WE LEARNT?

The quarterly magazine from the Tank Storage Association

Also in this issue, we explore the value of apprenticeships and the many innovations and initiatives that are taking place in the bulk storage and energy infrastructure sector.



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 issue of Insight. The Government has recently announced a plan for all new cars and vans to be zero-emission vehicles (ZEVs) by 2035 and the percentage of new zero emission cars manufacturers will be required to produce each year up to 2030. The ZEV mandate requires 80% of new cars and 70% of new vans sold in Great Britain to be zero emission by 2030, increasing to 100% by 2035. In October, the National Infrastructure Commission published its second National Infrastructure Assessment setting out recommendations for transport, energy, water and wastewater, flood resilience, digital connectivity, and solid waste. The inventories of TSA member companies will grow and adapt to meet the Government's ambitions for Net Zero. In this issue of Insight, we continue to shine a light on our vitally important sector and the proactive steps it is taking to open up new possibilities.

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PROCESS SAFETY LEADERSHIP – WHAT HAVE WE LEARNT?

When considering process safety incidents, including many of the most high-profile safety occurrences, it is clear that leadership failures are a significant causal factor irrespective of industry or sector.

Peter Davidson, Executive Director,
Tank Storage Association



When considering process safety incidents, including many of the most high-

profile safety occurrences, it is clear that leadership failures are a significant causal factor irrespective of industry or sector. Therefore, an active and continuous focus on leadership is essential to ensure that risks are not only properly managed but also understood.

Following the Buncefield explosions and fires of 2005, industry, trade unions and the COMAH Competent Authority (CA) established the Process Safety Leadership Group (PSLG) to carry out a dialogue to jointly develop, progress and implement meaningful, effective recommendations and practices that improve safety. In 2009, the PSLG published its Principles of Process Safety Leadership, which are aimed at providing the foundation to ensure high reliability organisations. These are eight principles for senior industry leaders to follow, and include board level active engagement and competence in safety management, engagement and involvement of the workforce in managing safety, as well as sharing best practice across industry sectors, and learning and implementing

lessons from relevant incidents in other organisations in order to maintain the currency of corporate knowledge and competence. These principles have now been widely adopted across the chemical and downstream oil industries. Furthermore, the COMAH Competent Authority in the UK has developed an operational delivery guide based on the principles, which is used to carry out site based interventions.

What is Major Hazard Leadership and why is it so important?

High standards of leadership are essential to ensure effective control of major hazard risks. And it is essential to understand the implications of business decisions on major hazard management, both in the short term and in the long term, with this last point also representing one of the principles developed by the PSLG. Good Major Hazard Leadership helps organisations to ensure that risks are given the resource, priority and attention required to reduce the likelihood of a major accident. It is also critical to the sustained management of risks. In this context, senior leaders need to not only understand what can go wrong that could cause a major accident, but also what systems are in place to stop this from happening and have access to the right information to provide assurance that those systems are working effectively.

Leadership intervention

The Tank Storage Association is a founding member of the UK COMAH Strategic Forum, a high-level joint industry and regulator forum established in 2013 to improve major accident hazard

leadership, management, and raise standards across the industry.

In 2019, the COMAH Strategic Forum launched the 'Year of Major Hazard Leadership'. To coincide with this important initiative, the COMAH Competent Authority (CA) published its Operational Delivery Guide '*Inspecting Major Hazard Leadership and Investigating Leadership Failures in Major Accidents and the supporting Major Hazard Leadership Intervention Tool*'. The Operational Delivery Guide is part of the COMAH CA strategy aimed at encouraging strong leadership and preventing major accidents. It underpins the CA's programme for ensuring effective leadership in preventing, controlling and mitigating major accidents and covers the background and arrangements for inspection and investigation of leadership. The separate Major Hazard Leadership Intervention Tool provides the principles to use when engaging with senior leaders.

Inspections by CA partners began in 2021. The expectation of the COMAH CA when carrying out a Major Hazard Leadership intervention is to seek to ensure that leadership and process safety competency are demonstrated at all levels within the business, that the risk profile of the site is understood, and sound risk assessment has been carried out. In addition, Major Hazard Leadership intervention is aimed at ensuring that there is effective communications, a robust management of change procedure in place and that the integrity of operations is maintained and not compromised for short term gain.

Intervention further seeks to ensure that the business is a learning organisation – in that there are effective arrangements in place to share and learn from best practice and knowledge both internally and externally from the business – and process safety performance is reported to, and understood by, senior leaders. Each COMAH operator visited as part of the Major Hazard Leadership interventions is scored using the performance rating table contained in the Operational Delivery Guide. This rates the operator between 10 (strong assurance that the site meets the requirements of the process safety leadership principles) and 60 (there is no assurance that the site meets the requirements of the process safety leadership principles). The majority of sites inspected scored a rating of either some assurance or good assurance

Lessons learnt from interventions

To encourage best practice, it is important to understand and share common themes and recommendations arising from these leadership interventions. This gives operators the opportunity to learn from common mistakes and strengthen their own processes. Common themes and trends emerging from the Major Hazard Leadership inspections carried out to date include the following:

Safety leadership is at the core of managing a major hazard business.

- Major Hazard Leadership should be clearly defined and written into every senior leader's job description
- Change management is critically important and there should be a robust system in place

- The environment is also part of COMAH compliance and must be considered when effectively managing the business

Major hazard leadership requires board level involvement and competence.

- Competence on Major Hazard Leadership is required at Board level – it should not be left to one individual
- Read and understand the key elements of the Safety Report
- Senior leaders headquartered outside of the UK may not have a clear understanding of the UK COMAH regulations and the risk-based approach to safety

Good major hazard management does not happen by chance and requires constant active engagement.

- There is no one-size-fits all solution to Major Hazard Leadership, each business and each site is unique and has unique challenges
- Plan changes appropriately and with plenty of time. If there are known delays (for example in updating Safety Report) advise the COMAH CA as required

Board-level visibility and promotion of major hazard leadership is essential to set a positive safety culture throughout the organisation.

Engagement of the workforce is needed in the promotion and achievement of good major hazard control leadership.

- Communication within the business is key, both upwards and downwards

Monitoring major hazard performance is central to ensuring business risks are being effectively managed.

- Be aware of your Safety Management System and monitor how effective and efficient it is

Publication of major hazard performance information provides important assurance about the management of risks by an organisation.

- Key Performance Indicators (KPIs) for process safety should be understood, reviewed and refreshed to avoid complacency

Sharing best practice across industry sectors, and learning and implementing lessons from relevant incidents in other organisations, are important to maintain the currency of corporate knowledge and competence.

- The COMAH CA is open to working together with COMAH Operators to improve Major Hazard Leadership. If there are concerns or queries, these should be discussed in the first instance with the COMAH Intervention Manager. Relevant Trade Associations may also be able to assist, sharing best practice and lessons.

What more can be done?

It is important that operators do not focus solely on the lessons from interventions already carried out, but also consider what more can be done.

Communication

Communication is key, and senior leaders should strive to ensure staff at all levels within the business, including operators, supervisors, health and safety professionals and managers, are actively engaged in order to determine if there are any issues that are concerning them.

They should also ensure that they are exposed to all relevant information that demonstrates to them how well their systems and processes are working.

Competency

One emerging trend from the leadership interventions is that those senior leaders who were exposed to and are aware of the Process Safety Leadership Group's Principles of Process Safety Leadership, and who had attended relevant Safety Leadership training, were able to better understand the challenges to their business and respond more effectively to the questions raised as part of the Major Hazard Leadership inspection. Businesses should seek to ensure that all senior leaders have the appropriate training to give them a clear insight into how to embed process safety management and promote a positive safety culture throughout their organisation, as well as ensure that suitable and sufficient resources are in place to continually develop staff competency.

Key Performance Indicators (KPIs)

KPIs for process safety, sometimes referred to as Process Safety Performance Indicators (PSPIs), are an essential tool to understand the safety performance of a business.

Senior leaders should work with their teams to ensure that KPIs are meaningful, useful and give the correct information. They should understand and be prepared to challenge the information that they are given and, most importantly, they must be prepared to act on any warning signs that those indicators present.

Conclusions

The themes and learnings from recent Process Safety Leadership interventions can be summarised into three areas.

Firstly, the essential need for leaders to ensure effective communication to improve process safety across the entire organisation. Secondly, leaders, regardless of their role or responsibilities, should be able to demonstrate an appropriate level of process safety competency. Finally, leaders should understand the importance of having an effective set of process safety performance indicators and be prepared to challenge what those indicators report to seek to continuously improve process safety performance.

All senior leaders in major accident hazard businesses, including those regulated by COMAH and those who manage major hazards that come under different regulatory regimes, should consider how effective process safety leadership really is across their organisation, and use the resources available to them (including information published by the UK's COMAH Strategic Forum) to develop an informed and achievable improvement plan.

Author

Peter Davidson is TSA's Executive Director and is responsible for all aspects of advocacy and lobbying on behalf of the sector, and for promoting process safety leadership, helping members achieve excellence in this area and work toward becoming high reliability organisations. Peter works in close collaboration with the UK Government and Regulators and is a leading member of a number of cross-industry committees, Process Safety groups and the Federation of European Tank Storage Associations.

Zero Emission Vehicle (ZEV) mandate and new funding to encourage zero emission trucks

The UK Government has announced a plan for all new cars and vans to be zero-emission vehicles (ZEVs) by 2035, following its consultation on a zero emission vehicle (ZEV) mandate and CO₂ emissions regulation for new cars and vans in the UK. The ZEV mandate will apply to England, Wales and Scotland from January 2024. The intention is that Northern Ireland will join the mandate once the Assembly is able to pass the required legislation.

The plan includes a transition starting with 80% of new cars and 70% of new vans sold in Great Britain to be ZEVs by 2030, reaching the 100% goal by 2035. The plan also allows for manufacturer flexibility with minimum annual targets, starting at 22% of new cars sold in 2024 being ZEVs, as originally proposed, rising each year up to 100% in 2035, although some manufacturers plan to reach 100% sooner.

For vans, the Government has amended the early targets slightly. The previous target would have seen a rise from 10% of new vans sold being ZEVs in 2024 to 19% in 2025. The target will now rise from 10% in 2024 to 16% in 2025. It will then rise each year to 70% in 2030 and finally 100% in 2035. For both cars and vans, while the targets up to 2030 will enter into force from January 2024, the Government notes that targets from 2031 onwards “will be set out in future legislation later in the decade”. The Government has also pledged to keep the mandate under continuous review. It has committed to

publishing a mid-point review in early 2027 and a post-implementation review in 2029.

There are also derogations for small volume manufacturers (SVMs), namely those registering less than 2,500 non-ZEV vehicles but more than 999 cars or vans per year. These manufacturers are able to apply for a derogation until – and including – 2029, with a “transitional year” in 2030. Micro volume manufacturers (MVMs), namely those registering fewer than 1,000 cars or vans per year, will automatically derogate from the ZEV mandate up to and including 2030. Special purpose vehicles (SPVs) will be exempt from the ZEV mandate. There are also additional credits for ZEVs used in car clubs. Furthermore, the ZEV mandate provides for a number of options as regards manufacturers’ over-compliance or in instances where manufacturers may not reach the applicable target.

In October, the Department for Transport (DfT) has also announced the investment of £200m to create new jobs and decarbonise the haulage sector. With the new investment the DfT hopes to create up to 370 new zero emission trucks with the creation of new jobs to help grow the economy. £2m will also be budgeted for small and medium sized businesses to help boost innovation and green tech in freight.

More information can be found on the UK Government’s website.

PROMOTING HIGH LEVELS OF SAFETY AND COMPETENCY ACROSS THE FUEL DISTRIBUTION INDUSTRY

The Downstream Fuel Distribution Forum (DFDF) has changed its name with a rebrand designed to reflect the evolution of the downstream fuel sector in the UK.



Downstream Fuel Distribution Forum



Over the summer, the Downstream Fuel Distribution Forum (DFDF), formerly known as the Downstream Oil Distribution Forum, changed its name with a rebrand designed to reflect the evolution of the downstream fuel sector in the UK.

The rebrand comes at a transformational time for the downstream fuel industry and reflects its role in the energy transition. At the heart of this change is the recognition of the evolution of the wider energy mix in light of an increased penetration of alternative fuels and a trend towards a broader range of technologies in support of the UK's net zero target by 2050. While recognising the evolution of the sector more widely as it plays its part in the energy transition, the DFDF is clear that its core focus will continue to be centred around the promotion of high levels of safety and competency across the fuel distribution industry by working in close partnership with all members to address current and future training needs.

The forum was established in 2012 to provide an on-going platform for the discussion and resolution of issues relating to health and safety as well as

training in the downstream oil industry. Its membership ranges from hauliers, to trade associations, government departments - namely the Department for Transport and the Department for Energy Security and Net Zero - and trade unions. As part of its early collaborative work, in 2014, the DFDF launched the Petroleum Driver Passport (PDP) Scheme, a voluntary industry scheme, supported by government, designed to ensure that all tanker drivers in the UK are trained and assessed to a consistent standard in loading, transporting and offloading petroleum fuel products from road tankers. The PDP Scheme is managed by Scottish Qualifications Authority (SQA) in conjunction with the PDP Management Group.

Currently, over 11,000 tanker drivers in the UK hold a PDP card demonstrating to terminal operators, hauliers, customers and the wider public that they have been trained to the same consistently high and externally verified standard in all aspects of tanker driving from pre-vehicle checks to loading, driving and discharging. The PD Passport is held by the individual driver to allow freedom of movement between employers.

The PD Passport is additional to ADR training and requires the completion of a practical assessment as well as classroom training with a multiple-choice exam. As with an ADR licence, all drivers need to undertake refresher training and pass an examination every five years to stay qualified. In addition, to maintain the validity of their passport drivers must undertake further classroom training



and pass a practical assessment annually. UK terminals are the primary point of enforcement for the PDP Scheme. Therefore, terminals require drivers to have their PDP card to load and carry out spot checks on annual validity.

With the PDP Scheme going from strength to strength, and almost ten years on from its introduction, the importance of the DFDF in continuing to provide an important space for multi-stakeholder dialogue and cooperation cannot be overestimated.

The forum also covers other key topics relating to the downstream fuel industry and is engaged in a number of important initiatives aimed at promoting high levels of safety and competency across the sector. Most recently, it has supported the development of the National Occupational Standards (NOS) for the transportation of hydrogen which set out the standards of performance that must be achieved, together with the knowledge and skills required to work safely and effectively in the hydrogen transportation industry. It has also produced a guidance on lone working for tanker drivers, outlining the importance of assessing risk and ensuring that appropriate controls are implemented, understood and continuously reviewed, and it has developed a petroleum addendum 'block' to the Large Goods Vehicle (LGV) Apprenticeship Standard to allow for the training of petroleum product drivers under this standard.

Looking ahead, the DFDF is gearing up to work in partnership with all relevant

bodies in relation to the implementation of the recommendations from the Health and Safety Executive's report on the review of the Petroleum (Consolidation) Regulations 2014 and will continue to engage in important discussions in relation to future training, safety and competency needs for net zero.

In order to connect more widely with all stakeholders and share information, latest news and developments, the Downstream Fuel Distribution Forum has also launched a brand-new LinkedIn page. This further step highlights the forum's continued commitment to promote learning and improve safety across the downstream fuel sector. With many opportunities, innovations and initiatives ahead, the DFDF stands ready to continue providing a collaborative platform for its members well into the future.

For more information about the Downstream Fuel Distribution Forum and the Petroleum Driver Passport Scheme, please visit www.pdpasport.com



TEAM EFFORT DRIVES YEAR OF GROWTH FOR UM TERMINALS

UM Terminals has achieved several notable successes during the last twelve months, including the expansion of its operations in the biofuels sector.



Phil McEvoy, Managing Director,
UM Terminals



One of the UK's leading bulk liquid storage specialists says a "team effort" is behind a year of sustained growth. UM Terminals has achieved several notable successes during the last 12 months, among the more important being the expansion of its operations in the biofuels sector.

Phil McEvoy, UM Terminals' Managing Director, who has just marked his first anniversary in the role, said: "We have had customers come to us with specific logistical challenges and we have been able to provide them with tangible solutions in enabling them to meet their tank storage requirements in a very fast and efficient way. We set ourselves the goal of building our capability in the biofuels sector during 2023 and thanks to a huge team effort we have been able to achieve this. This has been possible thanks to a commitment to continual investment in our assets, the recruitment of talented people, including in engineering and project management, and rigorous processes around regulatory compliance. The additional competency within the business means that we can now manage over 80 per cent of our asset integrity inspections and assessments

in-house, ensuring our asset base is fit for purpose and can provide a reliable ongoing service for all of our valuable customers. Much of our activity has been focussed on three of our main centres in Liverpool, Portbury and Hull. In total, we have created around 20 new jobs, strengthening our own in-house teams and giving a boost to the local economies of each of these areas. All of this has been achieved against the continuing tough macroeconomic environment which has been another reason for the focus on scaling our capability and commercial activity in the biofuels industry."

Further organic growth and expansion is planned for 2024 with a focus on the East coast and South of England, while also increasing the business's third-party tank storage capability in Ireland.

UM Terminals, part of the United Molasses Group, will also be rolling out various initiatives as part of its sustainability strategy.

Phil said: "We have already begun reviewing new low carbon technologies to heat and power our sites. As the biggest user of direct energy in the UM Group, we are committed to pursuing best practice in this highly important area."

Another area of focus will be the further digitalisation of UM Terminals' Client Central Services, enhancing the existing customer portal to make the experience as fast, automated and seamless as possible. UM Terminals maintains a broad portfolio of around 40 products that it stores including vegetable oils, industrial,

food and feed, chemical, fertiliser, fuels, biofuels and base oils. It achieves this operating out of seven terminals, strategically located across the UK, with a current capacity of over 300,000 cubic metres of bulk liquid storage, but with an ambition to increase this to around 400,000 cubic metres. During 2023, the business divested itself of a non-strategic asset in Birkenhead to focus on core activities at its other sites.

Value-added services include biofuel feedstock pre-treatment, blending, water dilution, product packing, HMRC bonded warehouse and COMAH compliance.

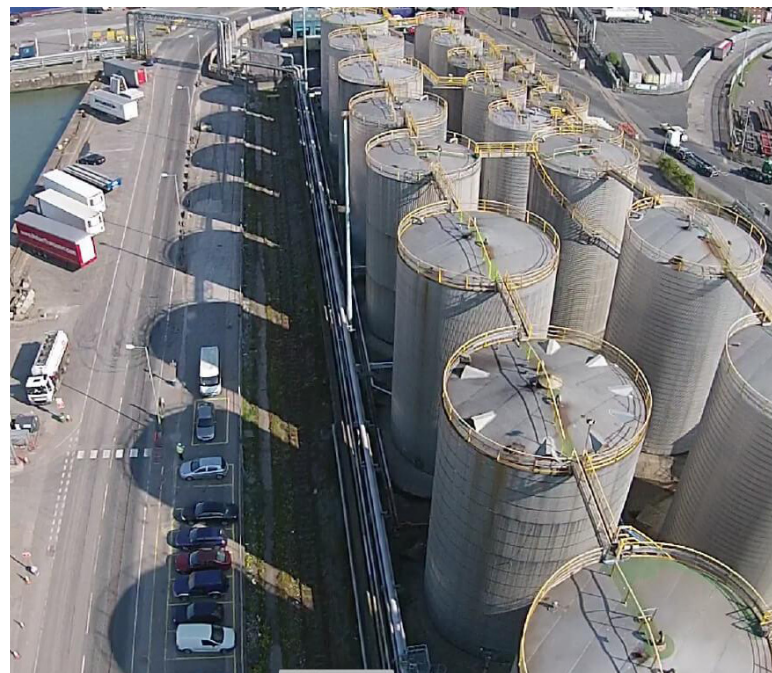
Phil McEvoy said: "One of the main reasons for the success we have had in the last 12 months has been our willingness to respond quickly to various customer requests, many of them technically challenging. We provide our customers with robust and sustainable solutions that meet their logistical challenges as quickly and effectively as possible. We have continued to invest in building a highly skilled in-house team across engineering, project management, customer service and integrity management. We have a portfolio of blue-chip customers who have been with UM Terminals over a long period of time. We pride ourselves on being easy to do business with and are all about building long-term relationships."

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

UM Terminals maintains a broad portfolio of around 40 products that it stores including vegetable oils, industrial, food and feed, chemical, fertiliser, fuels, biofuels and base oils.



Value-added services include biofuel feedstock pre-treatment, blending, water dilution, product packing, HMRC bonded warehouse and COMAH compliance.



THE FLIGHT TO NET ZERO: DECARBONISING THE AVIATION INDUSTRY

With the global net zero transition for aviation well underway, delivering at scale and speed is the biggest challenge collectively amongst industry and government alike.



In 2020, the UK aviation industry was the first anywhere in the world to commit to net zero by 2050.¹ Global airlines and governments through the International Civil Aviation Organisation (ICAO) have since followed suit. With the global net zero transition for aviation well underway, delivering at scale and speed is the biggest challenge collectively amongst industry and government alike. Airports can also increase their wider sustainability by considering avenues like noise pollution, responsible use of resources, waste disposal, and local air quality. All these items may not have a direct impact on carbon emissions but will help airports with their sustainability agendas.

Accounting for roughly 2% of global energy related carbon dioxide emissions, aviation emissions reached close to 800 Mt of carbon dioxide in 2022² – owing to a rapid growth in the aviation industry over the past few decades, one that surpasses that of rail, road, and shipping. Additionally, the aviation industry has been identified as one of the most challenging industries to transition into a low-carbon state due to substantial infrastructure costs, long fleet lifespans,

and limited opportunities for emissions reduction.

Nevertheless, there is plenty of room for optimism. From 2005 onward, the overall aviation emissions in the UK have managed to plateau, showing a mere 1% increase, in spite of a substantial 30% rise in carried passengers.³ Direct flight-generated emissions have played the largest part in this reduction through advancements in engine technology, fuel efficiency, and operational improvements. Manufacturers and airlines alike are continuing to ramp up investment into these technologies. Fuel efficiency of aircraft has been consistently improving since the introduction of the first passenger jets in the 1950s, with each new generation of plane reducing emissions by around 15-20%.⁴

Recent breakthroughs have seen the emergence of sustainable aviation fuels (SAF) as a direct substitute to conventional jet fuel. SAF tackle some of the aforementioned issues with decarbonising aviation as they use the same supply infrastructure and do not require adaptation of aircraft or engines. As a result of these properties, they are termed “drop-in fuels” and can currently be mixed with conventional jet fuel to varying degrees of up to 50%⁵ under ‘ASTM D7566’, which is the standard which sets out the international minimum composition and performance guidelines for commercial aviation. SAF flights have been rolled out across the globe as governments and airlines confirm SAF targets, creating a demand for the low carbon fuel. In particular, the UK is

finalising a mandate on conventional jet fuel supply to be 75% SAF by 2050, which would achieve 39% of the total CO₂ mitigation.⁶ Nonetheless, currently the SAF market in the UK is in its infancy and requires substantial growth to reach a mandate of 10% consumption by 2030 from the UK government.

Meanwhile, manufacturers like Rolls Royce and Boeing are also trialling new engines capable of running on 100% SAF, thereby removing the requirement for conventional jet fuel on the runway. However as much as SAF serve as an important interim stop-gap solution by offering a potential 80% reduction⁷ in emissions, they are not completely carbon neutral due to emissions from the production of crops, fuel refining etc. Looking further ahead, long-term investments have also been made into the development of battery and hydrogen-powered aircraft, to aid in attaining a “true” net zero.

Whilst direct-flight emissions will play a pivotal role in the decarbonisation of the aviation industry, there are other avenues in which aviation can reduce its carbon emissions. Airports play a substantial role in contributing towards emissions, with sources suggesting airport emissions could account for anywhere in the region of 5-10% of total aviation emissions.⁸ Airport emissions are not limited to aircraft ground operations and airspace modernisation but spread wider into areas like electricity usage and surface access.

By amending the most energy-intensive

processes, airports can realise large energy savings; examples of energy-saving measures include:

- Increasing the energy efficiency of terminal buildings - London City Airport has installed energy-reflecting windows to reduce heat gain;
- Upgrading heating and cooling systems - London Luton Airport replaced its old boilers with newer, more efficient units;
- Decarbonising ground power units – airports are now investigating the utilisation of biofuels in generators, substituting generators with options that have zero emissions, or adopting battery-based solutions.

SLR has supported several cross-disciplinary projects working to decarbonise the aviation industry. Working with a sustainable energy solutions company, SLR was commissioned to provide an assessment of the emerging UK sustainable aviation fuel (SAF) market, identifying the most suitable product and route to market for advanced aviation fuels. The work encompassed:

- An overview of the sales route for SAF and synthetic paraffinic kerosene (SPK) throughout the supply chain;
- Estimates of the requirements of scale for sale of SAF and SPK with reference to the UK market;
- Description of the physical requirements for product delivery;
- Review of policy, regulatory requirements and incentives for the sector;
- Provision of a list of stakeholders in

the UK SAF industry to encourage engagement and explore any opportunities for SAF production and sale;

- Conclusion on scale of SAF needs and entry routes to this market.

SLR have also provided technical expertise in the transport elements surrounding the airport’s function, this is a critical pathway to decarbonisation of the aviation industry, as typically half of an airport’s emissions arise from the surface journeys made by passengers and staff. SLR has helped airports across the UK develop surface access strategies and introduce new ground transport technologies for the sustainable development of airports and millions of UK air passengers annually.

One such example of SLR’s work in surface access matters is the City Airport Development Programme (CADP), London. The CADP is a £344 million privately funded investment to enable London City Airport to respond to forecast growth in passenger numbers and accommodate the next generation of aircraft. Plans included seven new aircraft stands, a parallel taxiway and a passenger terminal extension.

The development will transform the airport, one of East London’s largest employers in London’s Royal Docks, enabling the airport to welcome the new and quieter aircraft whilst adding additional capacity. Planning permission was granted in 2015, but our work continued through implementation. The permission granted by the UK Government will enable the airport to

process 6.5 million passengers by 2025 and inject £1.5 billion each year into the economy. We have a detailed understanding of the airport's transport characteristics and surface access arrangements, having provided strategic transport advice for several years. Our role has included:

- Engagement with key transport stakeholders, including the highway authority, TfL and DLR.
- An assessment of the capacity of the DLR and highway network.
- Provision of a transport charter for the environmental statements, assessing the effects of CADP during the construction and operational phases.
- Negotiation of planning conditions/obligations, including DLR.
- Upgrade contribution, a detailed Travel Plan and Delivery and Service Plan.

To learn more or to discuss your own decarbonisation project with the SLR team, please visit: www.slrconsulting.com

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About SLR Consulting

SLR is a global leader in environmental and advisory solutions: helping clients achieve their sustainability goals. SLR's Process Engineering team helps businesses to ensure the best chance of success for their projects by taking a systematic approach to every task and integrating seamlessly into our clients' project teams. Whether you're looking for technical due diligence and market research, the delivery of complex development works

for a brand-new facility, or to develop internal infrastructure for reporting against government compliance targets, SLR pays real attention to detail, building data and information into knowledge and understanding, using decades of collective experience.

Talk to us about your project at www.slrconsulting.com/contact

New staff members for Teamwork Security and Training Services

Teamwork Security and Training Services was formed in 2004 in response to the demand for Port Facility Security Officer training following the introduction of the ISPS (International Ship and Port Facility Security) Code under amendments to the 1974 SOLAS Convention.

Since its inception, Teamwork Security has expanded its security offering to cover the full range of ISPS and security consultancy services to the shore based maritime community, thereby enabling them to keep abreast of security risks and to implement measures to counteract the ever-increasing threat.

In 2017 following demand from existing clients and their need for a "one stop shop", Teamwork Security, together with trusted Associates, moved into general consulting offering SMEs and existing ISPS clients a broad spectrum of ISPS support services. Teamwork Security delivers complete ISPS support, audits, ISPS compliance, security exercises, as well as Wharf Approval and ADR support packages.

Teamwork Security is approved by the Department for Transport to deliver Port Facility Security Officer and refresher courses. It also delivers Harbour Master's investigators courses, staff Security Awareness and Search Training courses, consistent with the latest Port Facility Security Instructions as issued by the DfT.

Teamwork Security is delighted to have appointed a number of new staff members in the last six months. Wendy Weeks joins as ISPS Support Manager. Wendy brings a wealth of experience from the DfT and from a successful career in the Police. Rebecca Chatfield, Marketing Manager, joined in September and will be supporting the team with both marketing and business development. Chloe Sword joins this month as Business Support Assistant, coming from a career in the Ambulance Service, and Paul Bassham also joins this month as ISPS Support Officer after a successful career also in the Police. Tony Birr is also joining the team, bringing a wealth of maritime industry experience from a career in the Police, Military and Maritime industry, ensuring Teamwork Security and Training Services Ltd. continue to provide a first-class service to their customers.

For more information or ISPS support, visit: teamwork-security.co.uk or email: enqs@teamwork-security.co.uk

teamwork
security
& training services ltd

INTEGRATING SUSTAINABILITY INTO HAZARD STUDIES: MAKING PROJECTS SAFE, SMART AND SUSTAINABLE

Sustainability must be embedded as a company goal to have the greatest impact. Integration into existing hazard study processes is a realistically achievable approach.



With the uncertainty we are experiencing in relation to climate change and rising costs, professionals involved in process safety are confronted by a decision - keep project costs down or think about the bigger picture and try and to make a project as sustainable as possible over its entire life. We believe that adopting sustainable practices is not only the right thing to do, but it also makes good business sense. Integrating sustainability into projects is essential for businesses that want to achieve the following goals:

- Reducing your ecological footprint
- Making a more marketable product
- Minimising waste
- Reducing operating costs

Short term vs Long Term Costs

Naturally, financial costs are one of the most influential factors when making business related decisions, so reluctance to spend big sums on making changes to your plant in order to make it more sustainable is understandable. However, this is not to say that avoiding doing so is the most cost-effective option in the long term. The initial costs can be offset in several ways, and this requires a focus on capital expenditure (CapEx), as well

as just Operational Expenditure (OpEx). By considering both the initial purchase and installation costs (CapEx) plus the operating costs (energy and maintenance costs) for the life of the equipment (OpEx), initial purchase price differences can be quickly overridden by operating cost savings. Applying this same logic to other areas of your project (utilities, emissions, location, raw materials, sustainability of manufacturer etc.) can mean that sustainable practices can actually be financially beneficial to your business down the line, not to mention the inevitable positive impact on a company's reputation and brand image. For projects, it is particularly important to think about sustainability early in the design as it is more cost effective to make changes on paper and invest earlier on than it is to make changes to an already established and operating plant. Generally, the later in the project life cycle that changes are integrated, the greater the costs, and on the contrary the earlier any changes are introduced, the greater the potential savings in the long run. This got us thinking about the parallels with process safety. We promote Inherent Safety, so why not Inherent Sustainability?

Sustainability in relation to Hazard Studies

We believe that with relatively small changes to established and embedded hazard study processes, sustainability can be thought about at the right time to maximise the potential benefits. For example, Hazard Study 2 (HAZID) provides a perfect opportunity to consider more sustainable options, at this point the overall aim of the project is understood

but the project has not yet reached a stage where changes are extremely costly, both in time and money (e.g. detailed P&IDs have not yet been drawn). Hazard studies provide a natural forum to consider factors such as alternative technology that uses less energy, less raw materials, recovers more product, requires less maintenance, uses fewer consumable parts, or reduces the requirements for subsequent processing. Hazard studies can also be used to identify opportunities to reduce emissions and waste.

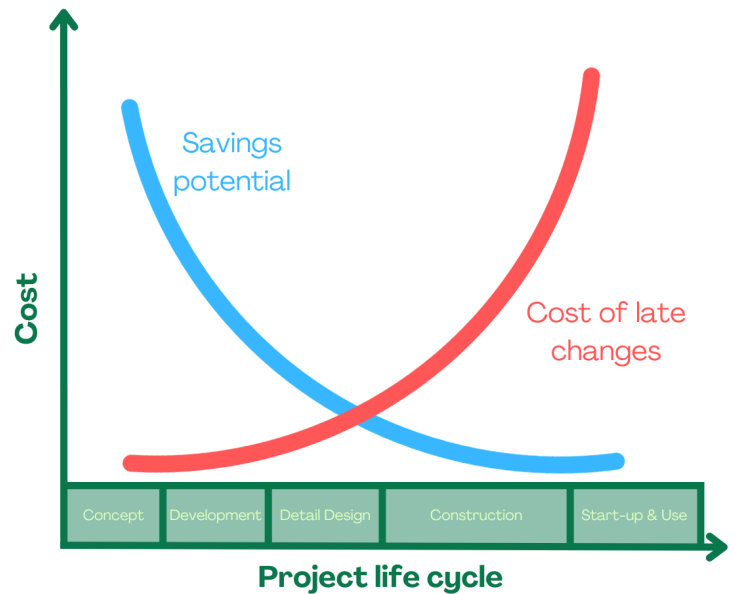
Integrate for Effective and Positive Change

Sustainability must be embedded as a company goal to have the greatest impact. Integration into existing hazard study processes is a realistically achievable approach. Introducing sustainability into the process safety management processes could have far-reaching benefits.

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

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Introducing sustainability into the process safety management processes could have far-reaching benefits.



ENABLING CUSTOMERS TO MAKE THEIR OPERATIONS MORE SUSTAINABLE

After the merger of ENDEGS and SIS, the newly formed ETS Group contributes to environmental protection with innovative green tech solutions.

David Wendel, Managing Director
ENDEGS GmbH, Managing Director &
CCO ETS Group GmbH



By 2050, Europe is to become climate-neutral – no greenhouse gas (GHG) emissions are to be emitted that are not otherwise compensated. To reach this ambitious but highly necessary goal, all parts of society need to contribute; politics and economy on a higher level as well as individuals on a smaller scale need to reduce their GHG footprint.

In the last years, many actions have already been taken to protect the environment. With the Paris Agreement made in 2015 or the European Green Deal made in 2019, goals have been set and commitments have been made to reduce emissions as much as possible and to compensate any remaining emissions. Measures to reduce the global GHG emissions can be summarised as decarbonisation – a field that covers many different measures such as renewable energies, electromobility and many more.

However, especially economy and industry are still responsible for a high amount of greenhouse gas emissions like carbon dioxide (CO₂) or methane (CH₄). Although many good measures have been implemented, more still needs to be done.

Therefore, new technologies, fuels and energy sources will be introduced in the coming years that are more sustainable. This notable shift towards alternative “green” fuels and energy sources includes for example LNG, hydrogen, ammonia, bio ethanol/methanol, e-naphtha or e-dimethyl ether. As all of these will require the implementation of new facilities, processes and supply chains, it is important to build the necessary infrastructure as well as the new energy sources will still be requiring storage terminals, tanks and much more.

Green tech solutions for a cleaner tomorrow

Developing innovative green tech solutions that help clients in different industries to make their operations more sustainable and to fulfil ESG criteria is an important task. Therefore, in August, we have formed the ETS Group – Environmental Technology Services. With our high-standard technology services, we help our customers to contribute to environmental protection by improving their carbon footprint and by reducing waste. As a world-wide organisation offering environmental services, we listen closely to our customers and develop our technologies so that they completely fulfil their individual requirements. Our innovative services fulfil the highest quality standards and are in line with all regulatory standards. Our mission is clear: we want to see to it that there are lower emissions world-wide.

Therefore, ENDEGS and SIS have merged under the umbrella of the ETS Group. Both German companies are experts

for the reduction of harmful industrial emissions and support facilities from different industries in reducing their carbon footprint. With a fleet of more than 50 mobile vapor combustion units, mobile nitrogen vaporizers, ATEX Zone 0 blowers and ATEX Zone 0 robots, the ETS Group is now the leading European expert for emissions control, treatment and reduction – an important factor for industrial decarbonisation and environmental protection.

Our mission: lower emissions in the industry

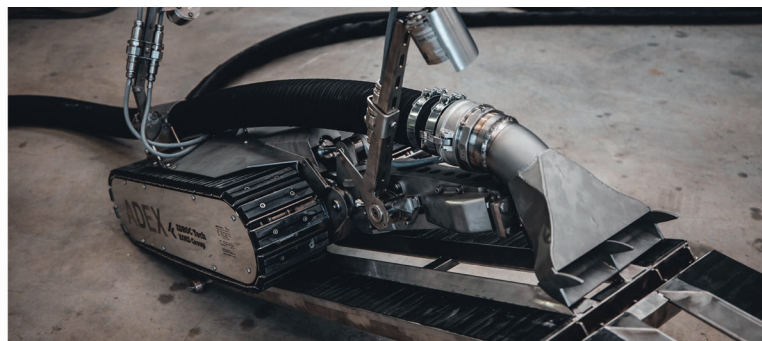
Reducing industrial emissions is an important part of environmental protection and can contribute significantly to reaching the aim of reducing the global carbon footprint. Hazardous emissions develop in many industrial processes such as loading and unloading procedures, tank cleaning, turnarounds and shutdowns, commissioning and decommissioning and in emergency situations. When they get into the air untreated, these hazardous emissions have an enormous impact on human health as well as the environment. Foremost of these are hydrocarbons, VOC (volatile organic compounds) and HAP (hazardous air pollutants). Thus, dangerous industrial emissions should be immediately treated so they are not just vented into the atmosphere. We offer various technologies for the treatment of emissions that help industrial facilities to significantly lower their carbon footprint and thus make their operations more sustainable.

ETS Group emissions reduction services focus on the effective elimination of VOC

With a fleet of more than 50 mobile vapor combustion units, mobile nitrogen vaporizers, ATEX Zone 0 blowers and ATEX Zone 0 robots, the ETS Group is now the leading European expert for emissions control, treatment and reduction.



The ETS Group's portfolio also includes the rental of the ATEX Zone 0 robot. It is remote-controlled and can be operated via two joysticks and a monitor showing every movement in real-time from a safe distance.



and HAP emissions from venting and flaring within the oil and gas, chemical and petrochemical, marine and shipping and food and fertilizer industries. Our services are environmentally friendly and sustainable as well as innovative and highly effective.

Innovative solutions for a reliable emissions reduction

As the only company operating in Europe, our units are capable of destroying all kinds of gases, gas mixtures and vapors from the explosion groups IIA, IIB and IIC with an efficiency of more than 99.99% and without any open flame. ETS Group mobile vapor combustion units are ideally suited for the degassing of all types of tanks, containers, pipelines, vessels, vacuum trucks and other components that are applied in industrial processes. Furthermore, our mobile incinerators are capable of temporarily replacing stationary emissions reduction systems during downtimes due to maintenance or malfunction. As a facility without an emissions treatment system is not allowed to operate, applying ETS Group mobile incinerator units as VRU back-up ensures that the daily operations can keep going without any interference.

In 2008, ENDEGS has developed its first mobile vapor combustion unit – in fact, enabling mobile degassing for the very first time world-wide by inventing the first ever portable and autonomously operated mobile incinerator. Nowadays, industrial degassing has become a standard. The challenge now is to adapt existing technologies so they can be applied to wider applications. The range of products and substances our customers in different industries work with is forever changing – especially now due to the necessity of alternative fuels and energy sources. Products like LNG, hydrogen

or green ammonia are more complex than conventional products as they are liquefied gases under pressure and therefore are highly flammable and have a high risk of explosion. With our fleet of mobile nitrogen vaporizers, the ETS Group can work with systems and system components containing flammable liquids as they now can easily be purged and rendered inert. Combining mobile combustion units and the nitrogen vaporizer makes the degassing of more complex products possible too.

As the ETS Group, we always aim to further optimise our technologies and to extend their field of application. Therefore, we have made innovative processes a priority and listen closely to our customers and their specific needs so that we can improve our portfolio to fit every application they need.

Security in the dangerous ATEX Zone 0

As enhancing occupational health and security is another important topic for us, we also offer services for the highly dangerous ATEX Zone 0. Carrying out manual tank cleaning, workers are exposed to a high health risk even despite wearing extensive safety gear. The ETS Group portfolio also includes the rental of the ATEX Zone 0 robot. It is remote-controlled and can be operated via two joysticks and a monitor showing every movement in real-time from a safe distance. Due to its small size and mobility, the robot can be used in many industries and for a wide range of materials.

Our mobile ATEX Zone 0 blowers enable the safe extraction of vapors from components such as plants, tanks and vessels. The blowers are available in different capacities – depending on the customer's requirements – and are easy to

use due to their small and compact size. We also supply piping networks, valves, detonation tube fuse, liquid separators and more to connect the ATEX Zone 0 blowers.

For more information, please contact: David Wendel, Managing Director ENDEGS GmbH, Managing Director & CCO ETS Group GmbH, at d.wendel@e-t-s-group.com

About the ETS Group

SIS GmbH ("SIS") and ENDEGS GmbH ("ENDEGS") have merged under the umbrella of ETS Group GmbH ("ETS Group") – Environmental Technology Services – in order to combine their strengths and to jointly drive the internationalization of the group even more intensively. Both companies specialize in thermal exhaust gas purification and degassing and are international leaders in the reduction of emissions of volatile hydrocarbons in the petrochemical and other sectors of the chemical and related industries. By using mobile combustion technologies, both companies make a significant contribution to occupational safety and environmental sustainability. Together, the two companies intend to invest in further development and the targeted expansion of management and sales structures in order to realize the full potential of the solutions offered in existing core markets and, in addition, to open up new opportunities in international markets of the chemical and other industries with a need for sustainable exhaust gas cleaning.



Second National Infrastructure Assessment

The National Infrastructure Commission (NIC) was set up on an interim basis on 5 October 2015 to ‘look at the UK’s future needs for nationally significant infrastructure, help to maintain UK’s competitiveness amongst the G20 nations and provide greater certainty for investors by taking a long-term approach to the major investment decisions facing the country’. The NIC is now a permanent body which provides the government with impartial and expert advice on major long-term infrastructure challenges. In its Charter, the National Infrastructure Commission commits to delivering a National Infrastructure Assessment (NIA) once every five years, setting out the NIC’s assessment of long-term infrastructure needs with recommendations to the government.

The first NIA was published on 10 July 2018 and analysed the UK’s long-term infrastructure needs up to 2050 whilst making recommendations for meeting them. On 18 October 2023, it published its second NIA, setting out recommendations for transport, energy, water and wastewater, flood resilience, digital connectivity, and solid waste.

The NIA takes a 30-year view of the infrastructure needs within UK government competence and identifies the policies and funding to meet them. Among a range of recommendations, the second NIA makes the case for heat pumps and heat networks as the solution for switching buildings from gas for heating noting that 7 million buildings in

England will need to make this transition by 2035 to meet the UK’s Sixth Carbon Budget, covering 2033 to 2037. It further calls on the government to rule out the use of hydrogen for heating and focus hydrogen on power generation and industrial decarbonisation. It states that new networks will need to be up and running by 2035 for the storage and transmission of hydrogen and carbon, to serve these needs and ensure heavy industry has the means to decarbonise and remain competitive in global markets.

The second NIA also sets out proposals for encouraging the private sector to build these networks, and an indicative map of core initial pipelines connecting key industrial hubs across Britain. The NIC further recommends that public spending frameworks for infrastructure are reformed to encourage more effective project management. It also calls for policy stability with clear, long-term goals and as well as visible and long-term pipelines of investment opportunities for the market to invest in the skills and supply chains essential to deliver the required infrastructure on time and to budget.

You can find the Second National Infrastructure Assessment by visiting: <https://nic.org.uk/studies-reports/national-infrastructure-assessment/second-nia/>

HIRING AN APPRENTICE - CAN YOU AFFORD NOT TO?

As the world makes advances through the energy transition, we will need young, imaginative, ambitious and well-trained operators who are able to adapt to an ever-changing future of fuel.



John Reynolds, Managing Director,
Reynolds Training Services



Hiring an Apprentice is the way to a safe, effective and lucrative future! But, as the leading training provider for Bulk Liquid Storage Apprentices, the question we get asked more than any other is: "How much does it cost?". Spoilers: we think you'll be very pleasantly surprised! But, before we tell you, let's make the case for why an Apprenticeship would be a great proposition at any price!

The value of apprenticeships

This is a great business sector to work in – and right now is the most exciting time to join. As the world makes advances through energy transition, we will need young, imaginative, ambitious and well-trained Operators who are able to adapt to an ever-changing future of fuel.

Our Apprenticeship programme is uniquely suited to helping you build a strong, sustainable workforce for the future by giving your new employees the knowledge, skills and behaviour they need to ensure a safe, sustainable and profitable future for themselves and for the entire industry. At Reynolds Training, we've pioneered the use of Apprenticeships as a way of ensuring

our sector has a pipeline of qualified and experienced new Operators to keep the fuel flowing and wheels turning.

We know that the TSA is committed to promoting Apprenticeships to the bulk storage sector. They've even published their own Apprenticeships Guide, which you can find on their website and which includes fantastic testimonials from successful Apprentices.

Our Science and Manufacturing Technician Apprenticeship with Bulk Liquid Storage Level 3 Technical Specialism is the ONLY Apprenticeship that is specialist to our sector – and, here at Reynolds, we were part of the team that developed it. We have pioneered delivering it for many years now.

Apprenticeships produce workers equipped with the following crucially important attributes:

- 1. KNOWLEDGE:** Foundational & classroom study gives learners the theoretical and technical knowledge they need
- 2. SKILLS:** Our NCPM facility provides learners the chance to apply their knowledge, then further develop those skills at their terminal
- 3. BEHAVIOUR:** Through practical experience supported by technical skills - personal & professional behaviours are learned & embedded

So, how much does an apprenticeship cost?

We're glad you asked, because here's the good news: taking on an Apprentice may be the most cost-effective way of getting

good Operators entering your business. Ever. Why? Because it's possible you've already paid for your new Apprentice!

As a UK employer, if you have an annual pay bill of more than £3 million, you have to pay 0.5% of that pay bill into the Apprenticeship Levy. If you take on an Apprentice, you can claim that money back.

So, training an Apprentice can be virtually FREE.

If you pay into the Apprenticeship Levy?

If you do pay the Apprenticeship Levy, you have effectively already paid for your Apprentice, so you can draw down the entire training fee from the central government.

Importantly: Your money is only available to you for 24 months. If you don't claim your money back in two years, it goes to pay for someone else's Apprentice!

If you DON'T pay into the Apprenticeship Levy?

If your business is not eligible to contribute to the Levy, you can still get 95% funding! So, your business can benefit from a new cohort of trained, time-served and qualified staff, who have cost you very little

What if you've already reclaimed your Apprenticeship Levy?

No problem. If you want to hire more Apprentices than your Levy contributions will pay for, you can still claim 95% funding for the additional Apprentices.

You can learn all about this at Gov.UK's Apprenticeship Levy pages, and we at Reynolds Training are more than happy to talk you through it, if you have specific questions and would like to talk about your bespoke requirements.

Apprentice costs in detail

While the Levy will help to cover your Apprentice training costs – it's worth bearing in mind that you, as the employer, will have to provide the employee-related costs. These will vary depending on the learner, on the costs of accommodating them off site, on the costs of acquiring appropriate PPE. Obviously there will be variables, but below is a reasonable approximation of how much a typical Apprentice will cost to fully train...

The lion's share of that additional cost will be the wage bill for the 30 months of the Apprenticeship, which you'd be paying anyway, whether you were training your staff or not. The difference is, at the end of the Apprenticeship process, you have an employee who is time-served, with the right knowledge, skills and behaviour, with a plethora of hands-on experience and the right attitude to be a productive, efficient and safe member of your team. Apprenticeships aren't just producing the Operators of today, they're producing the Supervisors, Team Leaders and Managers of tomorrow!

For more information, please visit www.reynoldstraining.com





The voice of the bulk storage and energy infrastructure sector



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