

integrated

Bringing clarity to complex insurance claims

Issue Eight 2020

MARINE LOGISTICS AND CYBER SECURITY

UK COMEBACK FOR ONSHORE WIND

REFINERY TECHNOLOGY:
INCREASING THE SUPPLY OF CLEANER SHIPPING FUEL

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Welcome to Issue Eight of **integrated**, our magazine devoted to the specialty insurance lines marketplace and sharing knowledge, experience and insight to improve claims management.

We hope you enjoy reading this in its new online format, and as always, would welcome your feedback and ideas for future articles.

When the pandemic struck and lockdown restrictions were first imposed around the world, like you we didn't know how we would be affected both personally and professionally. We wrote to our clients, to inform them that our cloud-based IT infrastructure gave us great flexibility and that our entire Integra Technical Services team (adjusting, operations and finance) was operating at full capacity, whilst working from our respective homes around the world.

Whilst face to face meetings were still taking place in some parts of the world, we issued a 'Client Meeting Protocol' for application before any physical meeting could take place. In essence a set of questions that both our colleagues and clients (insureds, brokers and insurers) had to answer relating to having themselves or them having been exposed to others with COVID-19 symptoms. Some readers might view this as a draconian measure but as we were all learning about COVID-19 in real time, we prioritised the

health and safety of our colleagues and clients above all else.

In April we took a deep breath when we saw a claim, which we would ordinarily have been appointed on, go instead to a competitor as they had an office in the country of the loss, and we didn't. This 'lost instruction' (from our perspective) got us thinking hard about how we would fulfil our role in the mid and post COVID-19 era. What happened next was fascinating to be part of. A sub-group of our leadership team quickly knitted together and pooled ideas to help us navigate our way over the potential barrier of only being appointed on losses where we either had an office or strategic partner in the country where the loss occurs. This rapidly built momentum and led to a deeper discussion, not just about our way of handling claims, but how the specialty claims handling process itself could evolve on the back of our collective accelerated digitalisation, which has been triggered by the pandemic.

At Integra Technical Services, we believe in the mantra that 'claims are the shop window of the insurance industry'. Therefore, claims handling is one of, if not the, most important processes in the industry. It follows that the claims process should be reviewed periodically, to see if efficiencies can be achieved and the claims experience improved. Lockdown forced us to look at the process as well as our role in it, and we could see a number of areas where the use of technology could create immediate, and we believe, lasting evolution.

Integra Remote Inspection Solution (IRIS) uses smartphone technology to allow us to remotely

survey any site in the world and was launched in the summer. We have already used IRIS on a number of losses around the world including in response to a solar plant loss in the Middle East in July, the explosion at the Port of Beirut in August, and damage caused by Hurricane Laura in Louisiana in September. The engagement so far from brokers and insurers has been excellent and we see IRIS being the first response on many notifications we're appointed on in the future.

Ally this initiative with us sharing loss related data with our clients each time a claim closes, in a format that can be easily absorbed into stakeholders' business intelligence systems. We hope you see that we are working hard on providing market leading loss adjusting services at the same time as we are innovating to offer clients a comprehensive service from 'incident to indemnity to insight'.

I hope that all of you, your colleagues and your families have remained safe thus far and continue to do so. Thank you for your continued support of Integra Technical Services.

Leo Dixon BSc (Hons)
Chief Executive Officer
Integra Technical Services Limited

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Integra move into 'BIG DATA'

The insurance industry's relationship with data has changed over the past five years, as technology advances open new opportunity. Reinsurers and insurers are especially keen to gather information from loss adjuster reports as the aggregated data can provide useful insights.

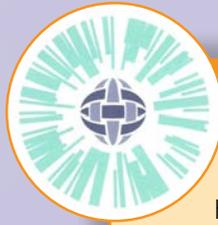
The challenge is that most, if not all, loss adjuster reports are PDF documents. Getting the information into business intelligence systems comes at a cost, as it can take countless hours and often requires some form of re-keying.

To help reinsurers and insurers, from this summer Integra Technical Services have started sharing loss related data in a digital, structured format at the same time as issuing their final reports.

Integra Technical Services' reports contain a great deal of useful information, such as the critical asset affected by the loss; the cause of the loss; the loss adjuster reporting frequency; reserving information; the Business Interruption, Delay In Start Up or Loss Of Production Insurance indemnity period in days; timing and value of the first payment on account; and how long the claim has taken to settle.

Leo Dixon, Chief Executive at Integra Technical explains "We are excited by this initiative. Not only do we expect this to immediately start saving reinsurers and insurers considerable time and expense, but we are adding information to our database relating to losses closed in the past five years. This goldmine of data is expected to provide sector, geographical, loss type and other insights and we plan to share this with our clients later in the year."

To find out more about Integra Technical Services plans please email leo.dixon@integratechnical.com



REIMAGINING THE SPECIALTY CLAIMS PROCESS

The long days and nights of lockdown have not stopped innovation or collaboration at Integra Technical Services. In a perfect example of digital acceleration, a sub-group of their leadership team has reimagined how specialty lines claims can be investigated and managed in a world with travel and work restrictions.

Integra Remote Inspection Solution (IRIS) is new simple to use service that does not require any specialist equipment and can be used immediately by any person, anywhere in the world. It has taken four months to develop and has already been successfully piloted on several claims.

Usually the loss adjuster will visit the insured premises to inspect the damaged asset or area or to monitor repairs.

With IRIS, the insured representative receives a URL link via email to commence the video

inspection. The Integra Technical Services' loss adjuster then directs the insured through the inspection process whilst they capture photographs and video footage remotely.

The broker and leading insurer can take part in the survey, enabling all parties to see the same information simultaneously and to be able to immediately access the media when the inspection is complete. All video output and high-resolution images are automatically stored on a secure, cloud-based portal hosted by Amazon Web Services (AWS) making it truly agnostic and preventing any interconnectivity or compatibility issues with any of the claims stakeholders' IT systems.

IRIS has been proven to speed up the inspection process, providing an early appreciation of the extent of damage and allowing claims stakeholders to get access to the most appropriate loss adjusting specialists.

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This publication is for the benefit of insurers, insurance brokers, insureds and other stakeholders involved in the services that are provided by Integra Technical Services Ltd. It is not legal advice and is intended only to highlight general issues relating to its subject matter but does not necessarily deal with every aspect of the topic.

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REIMAGINING THE SPECIALTY CLAIMS PROCESS

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They are then able to quickly agree a 'Damage Appropriate Response' that fits the claim, whether that is desktop, in-person or a hybrid adjustment approach.

Leo Dixon, Chief Executive Officer, Integra Technical Services says "The adoption of IRIS puts the claims stakeholders at the centre of the claim process, with all the stakeholders able to participate in a remote video inspection of the damage within hours of the incident occurring. With genuine collaboration from the outset, the parties get to hear the adjuster's preliminary thoughts on the extent of damage, and this is followed up with an 'Order of Magnitude' within hours of the video inspection being completed."

This less intrusive and more transparent approach enables insurers to assess the potential financial exposure quicker than ever before, which in turn brings about faster decision making leading to better claims experiences for the insureds.

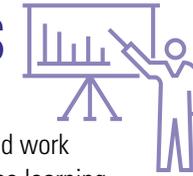
He concludes "What's really encouraging is that the pilot has demonstrated wide ranging application beyond the COVID-19 era. For example, it could be used for the management of attritional and medium-sized losses, and not just speed up the claims process, but reduce claims management costs and deliver environmental benefit by reducing the insurers' and loss adjusters' carbon footprint."



TRAINING AND EVENTS

Increased demand for training

The onset of COVID-19 and the subsequent lockdown and work restrictions had a positive effect on the demand for online learning and development. Firms wanted to maintain a strong engagement with their teams and saw training as an excellent opportunity, one which offered additional benefits. Integra Technical Services were able to deliver a broad range of courses for several (re)insurers and insurance brokers, receiving tremendous feedback. If you would be interested in any of these or other claims management courses for your staff then please email phil.durrant@integratechnical.com



Construction and Engineering

Quantification of CAR Claims	Underground Services Liability Perspective (Out Of Sight, Out Of Mind)
Geotechnical Investigations	Tunnelling – New Austrian Tunnelling Method (NATM)
Issues with Ground Borne Vibration	DSU – Easy Right!

Renewable Energy

Offshore Wind Subsea Cables – 'a tripping hazard'	Offshore Wind Installation - Challenges and Limitations
Offshore Wind Farms -Where Are We In The Summer of 2020?	Wind & Solar Insights

Solar - Down The Cost Curve

Downstream Energy

Observations & Characteristics	Petro-economics
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On demand webinar

Delay In Start Up Insurance - Easy Right!

Access our on demand webinar to learn about Delay In Start Up (DSU) Insurance, one of the most complex business classes for claims. This ten minute presentation provides a basic introduction and considers the issues that complicate DSU claims.

Click here to view the webinar.

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FOCUS ON 
**CHARTERED
ADJUSTERS INC.**


Chartered Adjusters Inc. is a leading Philippines Loss Adjusting firm formed in 1965 and with a strong reputation for service excellence based on professionalism, impartiality, and integrity. In March 2020 they formed a strategic alliance with Integra Technical Services that enables risk managers, reinsurers, local cedents and insurance brokers to draw on the combined expertise of the two firms and access an enhanced loss adjusting solution for claims in the Philippines.

Alongside owned operations and existing strategic alliances it means that Integra Technical Services can now offer a local service in 26 countries of the world.

INTEGRA CONTINUES EXPANSION



London



David Dimelow
UK Engineering Director

Developing the leading electrical and mechanical engineering team in the UK.



Doug Horne
Head of Marketing & Communications

Responsible for brand development and all marketing activities.



Mark Hunter
Chief Financial Officer

Our Executive Team member with finance responsibility.



Szen Ong
Engineering Adjuster

A mechanical engineer with responsibility for Upstream, Midstream and Renewable Energy claims.



Singapore



Derek Gong
Loss Adjuster

A Doctor of Philosophy in Material Science and Engineering Gas, Derek will focus on Oil and gas production and Power Generation.



Ben Davis
Loss Adjuster

Chemical engineer working on Onshore/Offshore Energy, Power Generation and Construction claims.



Miami



Iain Mac Bean
Executive Adjuster

Highly experienced Renewable Energy loss adjuster, including Construction, Operational and BI/DSU.

Houston



Mark Therrien
Executive Adjuster

A chemical engineer with a track record for adjusting Downstream Oil and Gas, Power Generation and Manufacturing claims.



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Integra opens Miami office

Integra Technical Services have strengthened their proposition in the USA with the opening of a new office in Miami, Florida and the appointment of Iain Mac Bean as Executive Adjuster.

Iain is a seasoned claims professional with over 30 years of international adjusting experience. He will lead the new Miami office, which will provide support to clients in the US as well offering additional resource to Integra Technical Services' offices in Latin America.

Having started his career as a claims broker, he moved into loss adjusting and has multi- industry sector experience. Before moving and living in the US, Iain was based in South Africa, the United Arab Emirates, and the United Kingdom, and travelling from these hubs to handle losses throughout Europe and Africa. In addition, and in response to natural catastrophes, he has also handled claims throughout the Caribbean and Central America.

Since moving to the US Iain has settled many complex construction losses, particularly relating to P3 projects and has considerable experience adjusting and settling Wind, Solar and Battery Storage related Renewable Energy claims.

Phil Moretti, Managing Director USA, Integra Technical Services commented. "His extensive experience in renewable energy and his knowledge of international markets strengthens the service we can offer in the region. I look forward to working closely with him as we continue to provide our clients access to high levels of technical expertise."

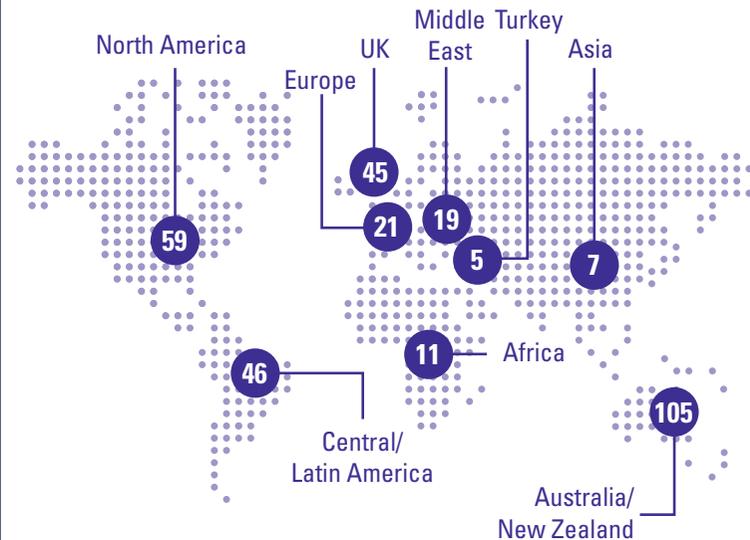
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Integra Technical Services US operation now has eight loss adjusters with expertise including Oil & Gas, Petrochemicals, Power Generation, Renewable Energy, Construction, Engineering, Mining, Manufacturing, Business Interruption and Extra Expense and Property lines of business.

”

Integra Technical Services H1 2020 New Instructions

In the first half of 2020 Integra Technical Services received new instructions in 35 countries of the world.



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When the manufacturer of a brass valve received notification of a claim relating to the flooding of a luxury 10 storey London apartment block, it was alleged that material and manufacturing defects had resulted in the failure of the valve and was therefore the immediate cause of significant property damage amounting to several million pounds. It seemed a clear-cut case, but by applying lessons learnt handling many similar losses, Vince Skipper, specialist Liability adjuster at Integra Technical Services, was able to bring his expertise to the claim investigation and adjustment.

BACKGROUND

A report from a market leading forensic engineer identified that a part of the brass valve (a nipple) had suffered stress corrosion cracking (SCC), which is a recognised phenomenon with brass components in certain environments. SCC of brass, like other alloys, only occurs in the simultaneous presence of a tensile stress (residual or applied) and a specific corrosive environment. The nipple in question is combined with other parts to create the valve and this had cracked causing water to escape. The allegation was that the nipple had been manufactured from an inappropriate alloy and/or had been overtightened on assembly.

Having implemented the five-step process (opposite), Integra Technical Services were in a good position to update the insured and their insurers, providing them with a good understanding of the claim, the potential cost and likelihood of defending it.

FIVE STEP PROCESS

1. Is the manufacturer aware of issues with the part in question? As Vince explains "Sometimes, the manufacturer might be aware of a faulty batch or may have past experience of similar issues."
2. Clarify the failure rate with the part in question. Have there been other similar incidents?
3. Review the claimant's evidence and consider whether to get a second opinion. According to Vince "We would get our own expert opinion 90% of the time, especially when considering the claim quantum in this particular case."
4. Select your expert carefully. Vince suggests "This is key, and where the loss adjuster can bring their own experience to bear."
5. Consider whether the claimant has effectively mitigated the loss.

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THE PEER REVIEW

Mike Broadhurst is Technical Authority – Metallurgy for Intertek Production & Integrity Assurance (formerly known as CAPCIS Ltd, a materials and corrosion consultancy and industrial offshoot of the University of Manchester) was appointed to review the expert opinion. Mike explains “I wasn’t happy that the metallurgical examinations had been undertaken properly based on the photographs presented in the various reports produced by the other parties’ experts. As with any investigation the devil is in the detail, a peer review of reports can only take you so far, where possible you always want to examine the damaged parts first-hand.”

A detailed destructive examination involves examining the microstructure of the alloy, the fracture/crack surfaces using equipment like electron microscopes; undertaking chemical analysis using sensitive techniques to identify any corrosive species that are present; and checking to make sure the component was manufactured to the design requirements. Apart from a physical examination a review of the system’s operating and service histories, inspection records etc from installation up to the time of failure is also important in building the picture to identify the mechanism and ultimately the cause of failure. According to Mike “It is important to go into each investigation without any preconceived ideas and follow the evidence. You have to carefully assess and interrogate each piece of evidence and see how these interrelate before putting forward any ideas as to what happened.”

Similar to a police detective, after many hours of examinations and testing different hypothesis the metallurgist started to build a picture. The results of Mike’s investigation confirmed that the mechanism of failure was stress corrosion cracking most probably due the presence of ammonium compounds in the system water - the causes of failure were not those put forward by the other experts.

Having got an identical valve from the manufacturer and the nipple progressively tightened, a rubber o-ring seal at the bottom of the nipple split just beyond the recommended torque. This would have caused the valve to leak when the system was first pressurised after installation - overtightening of the nipple was therefore discounted.

The alloy used to produce the nipple conformed with the design specification requirements, no significant manufacturing or material defects were found. This alloy has been used for decades by many OEMs in the manufacture of brass fittings for use in water systems and has a proven track record. The use of an inappropriate alloy was therefore discounted.

Scrutiny of the operating records, in particular chemical analyses of the system water, indicated an imbalance in the demand of a nitrite inhibitor added to the system suggesting the presence of nitrite reducing bacteria (NRB). If ammonia is present in heating and cooling systems, it generally comes from an infestation NRB reducing nitrite corrosion inhibitor to ammonia. This was considered to be the most likely cause of the failure of the nipple.”

With this information to hand Integra Technical Services was able to successfully repudiate the loss. It all goes to show the importance of clear methodology when reviewing potential liability claims.

MEET THE AUTHORS



Mike Broadhurst
BSc(Hons) CEng MIMMM MAE

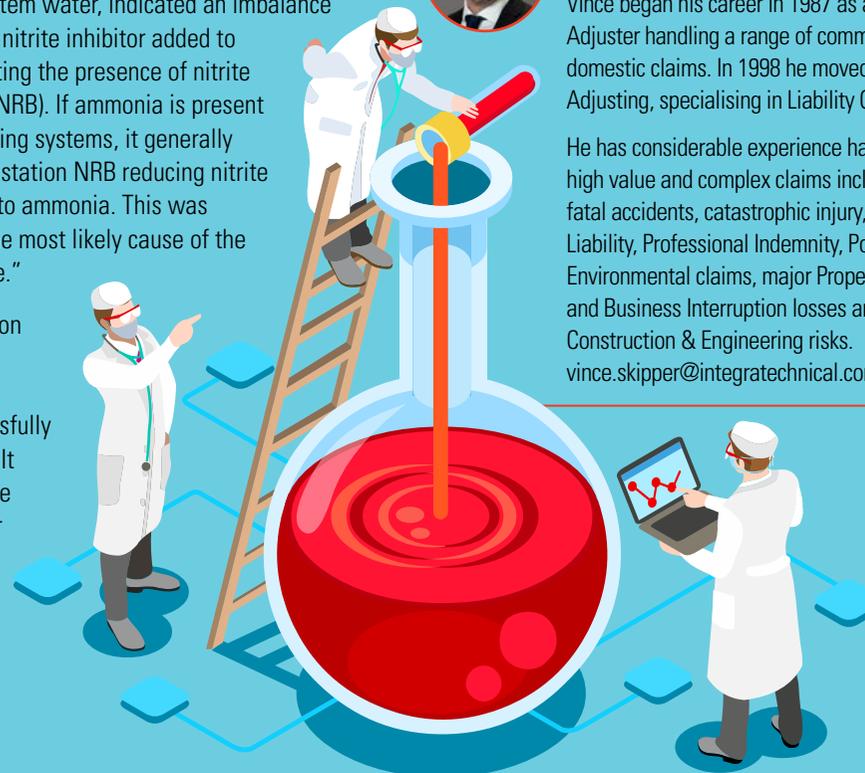
Mike is an industrial metallurgist with over 35 years’ experience, specialising in failure analyses and investigations and the provision of expert opinion and advice covering a wide range of industries and components. He has written over 1,000 confidential reports and opinions detailing a wide variety of failure investigations covering personal injury claims through to losses of major items of plant and equipment. mike.broadhurst@intertek.com



Vince Skipper
ACII, Chartered Insurance Practitioner

Vince began his career in 1987 as a Claims Adjuster handling a range of commercial and domestic claims. In 1998 he moved into Loss Adjusting, specialising in Liability Claims.

He has considerable experience handling high value and complex claims including fatal accidents, catastrophic injury, Product Liability, Professional Indemnity, Pollution/ Environmental claims, major Property Damage and Business Interruption losses arising out of Construction & Engineering risks. vince.skipper@integratechnical.com



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AI, AUTOMATION AND CYBER SECURITY: RISING TO THE CHALLENGE

Automation and artificial intelligence (AI) are transforming the global marine, transportation and logistics sector at a faster rate than many had predicted. The potential to transform businesses and contribute to economic growth is undeniable, but it does not come without risk and insurance has a valuable role to play.

Automated container terminals are nothing new, they have been around since the early 1990s having first been developed in the Port of Rotterdam. These early initiatives were designed to operate on a 'closed loop' or 'point to point' basis - for example the Port of Rotterdam was an early adopter of automated unmanned rail mounted gantry cranes and unmanned automated guided vehicles for horizontal quay-yard container transfers.

What we are now witnessing is the transformation to fully automated integration of ships, port facilities, trucks, trains and warehouses in a bid to reduce costs and occupational health and safety risks and increase productivity. It's suggested that automated terminals can result in TEU throughput reaching 10,000 TEUs per acre or more, almost double traditional operations where 5,000-7,000 TEUs per acre is the norm. What's more, labour requirements that usually equate to 50% of a terminal's costs can be reduced 40%-70%.

The Victoria International Container Terminal [VICT] in Melbourne, Australia became the world's first fully automated container terminal in 2017. A McKinsey report in December 2018 highlighted that US\$10 billion had been invested in port automation, and predicted that momentum would accelerate with

a further US\$10-15 billion investment in the next five years. By mid-2019 there were 49 fully or partially automated container terminals around the world.

Automation and AI is not just happening in container terminals. There are examples in rail freight, freight trucks and warehouse operations, not forgetting that in February 2020 we witnessed the launch of the world's first electric and fully autonomous container ship, Yara Birkeland. The 120 TEU open top container ship will reduce NOx and CO2 emissions by reducing diesel-powered truck transport by around 40,000 journeys per year. Whilst it cost US\$25 million, three times that of a conventional vessel, it is forecast to cut operating costs by 90%.

What is TEU?

The twenty-foot equivalent unit (TEU) is an inexact unit of cargo capacity often used to describe the capacity of container ships and container terminals.

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CYBER SECURITY ISSUES

A global AI survey published by McKinsey in December 2019 garnered responses from a broad range of industries across the world, including those involved in transportation and logistics. It cited cyber security as the most widely recognised risk. While many cyber events are minor, major incidents result in consequential commercial losses which can be in the hundreds of millions of dollars.

As the risk in these new generation technologies is significant, they are often retrofitted to legacy assets. This creates even greater technical challenges including the integration of cyber physical systems; converging multiple communication protocols necessary for seamless quality of service; and a dramatically larger network surface increasing potential vulnerability. It is these vulnerabilities that threat actors are continually looking to exploit.

Recognising the changing nature of risk and major industry organisation cyber regulations and guidelines (such as those published by the International Maritime Organisation) insurance brokers and (re)insurers are looking to expand cyber coverage to better address the 'silent' cover disconnect and uncertainties between

traditional hull and machinery, cargo and marine liability policies and cyber risk.

Recent policy innovation by insurance brokers is beginning to point the way, with programs directed at the convergence of ships, ports, trucks, trains and warehouses with data addressing the needs of risk managers.

This raises the challenge of managing complex insured incidents which can occur with automated assets. Recent cyber-attacks on semi-automated shipping, port and landside transport and warehousing assets have shown that the integrated supply chain can be shut down, resulting in significant losses. These losses – in terms of both cause and effect – have no conventional precedents and require expert loss adjusting expertise able to understand the related emerging technologies. Indicating the rate at which these emerging technologies will become fully autonomous, a 2018 survey of AI researchers found the consensus view was that by 2027 the abilities of autonomous truck driving agents will surpass human drivers.

For these reasons, having the right team that understands logistics as well as current and emerging technology stacks is critical from the initial notification of loss, as when claims eventuate there is no room for 'learn as you go'.

Integra Technical Services has assembled the appropriate experts who can investigate these losses involving the integration of marine and technology; and applying the circumstances to the contract of insurance.

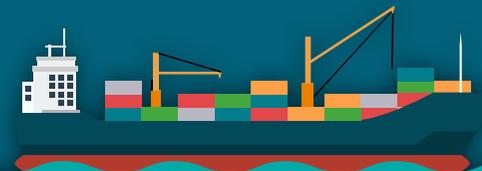
MEET THE AUTHORS



Andrew Gibson is a Chartered Loss Adjuster and qualified lawyer, shipbroker and arbitrator who has worked in the marine transportation and logistics sector since 1981.
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Gerard Ward is a cyber insurance specialist and holds a Masters Degree in Information Security and Digital Forensics.
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PORT AUTOMATION DEFINED

Automation in ports has five components. Whilst there are individual benefits, the full value will only be unlocked if they are integrated and coordinated:

1. Automated equipment
2. Equipment-control systems
3. Terminal control tower
4. Human-machine interactions
5. Interactions with the port community

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INCREASING THE SUPPLY OF CLEANER SHIPPING FUEL

Commitments to cut climate-altering pollution is stimulating new regulations, such as IMO 2020, and reshaping marine fuel markets. Four main refining technologies can help adapt refinery output products to take advantage of these new greener fuel demands. However, adding or modifying process units not only requires substantial capital expenditure, but also increases refinery complexity and invites its own unique set of risks especially during the construction and commissioning process.

Throughout 2019 the global shipping and refining sectors were awash with speculation about how IMO 2020 would affect fuel markets when it came into force. In normal times, the shipping industry is estimated to consume about four million barrels per day of marine bunker fuels, with IMO 2020 potentially impacting 50,000 merchant vessels globally.

The new IMO 2020 regulations limit global bunker fuel to 0.5% sulphur

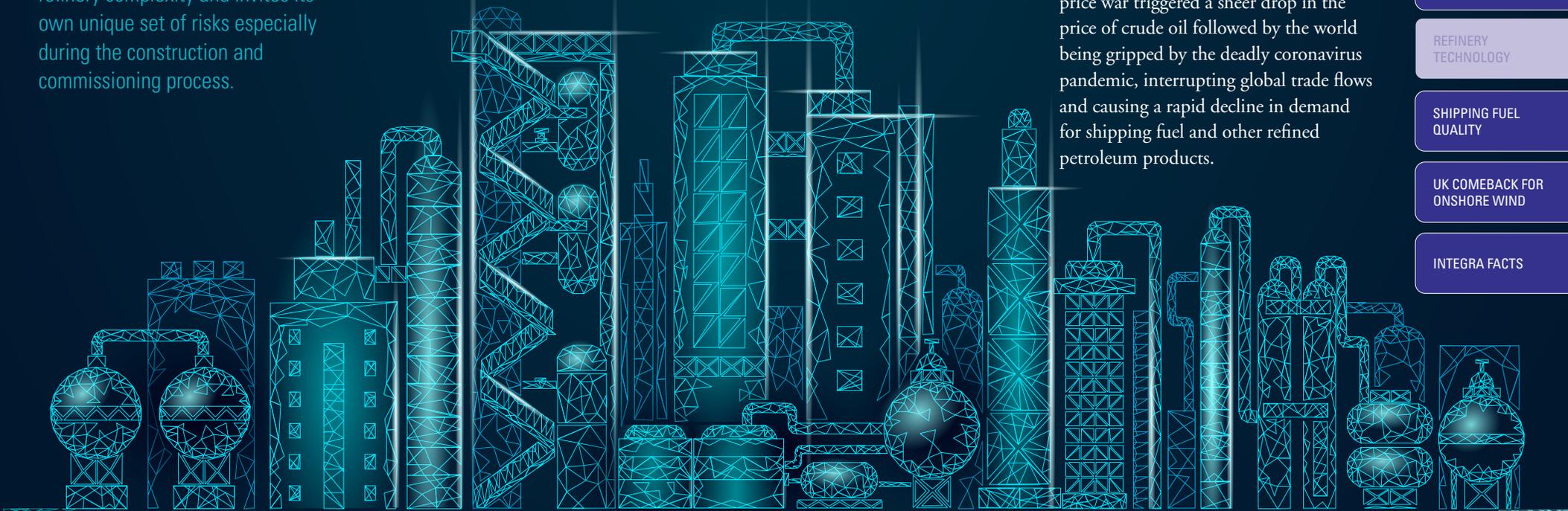
content unless vessels have scrubbers installed to clean the emissions from usage of less-clean fuels, with prohibitions commencing 1 March 2020.

Ben Davis, Loss Adjuster for Integra Technical Services based in Singapore and a chemical engineer explains “The regulations mean that those shipowners affected have to carefully select their strategy. Do they install open or closed loop scrubbers; switch to alternative fuels (for example LNG); or use low sulphur

fuels? Much of the “bottom of the barrel” heavy fuel oils typically used in shipping are no longer compliant, so refineries need to adapt their processes to meet the increased demand for compliant fuels such as distillates and Very Low Sulphur Fuel Oil (VLSFO)”.

Market interrupted

No sooner had the new rules kicked in when market actors had to urgently confront two simultaneous black swan events. The Russia–Saudi Arabia oil price war triggered a sheer drop in the price of crude oil followed by the world being gripped by the deadly coronavirus pandemic, interrupting global trade flows and causing a rapid decline in demand for shipping fuel and other refined petroleum products.



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Before these events, there were huge order lists for scrubbers to be retro-fitted to vessels. According to a McKinsey report published in November 2019, the scrubber payback period ranges from one to three years for a large vessel based on a light-heavy fuel oil price differential of between US\$15 and US\$23 per barrel. However, the spread between the cost of VLSFO and non-compliant High Sulphur fuel (HSFO) collapsed in early 2020 and many of the scheduled retrofits were impacted as shipyards closed due to COVID-19, resulting in many Shipowners abandoning plans to install scrubbers and instead moving to usage of VLSFO.

According to Ben, “This means that as global trade flows return, refineries will start to consider their marketing mix and we could see new investments in technologies to help them adapt the output products to take advantage of new market demands and potentially higher profit margins.”

Four main refining technologies

There are four main technologies that can enable refineries to produce VLSFO or to convert “bottom of the barrel” heavy hydrocarbons to produce lighter compliant fuels for the marine industry:

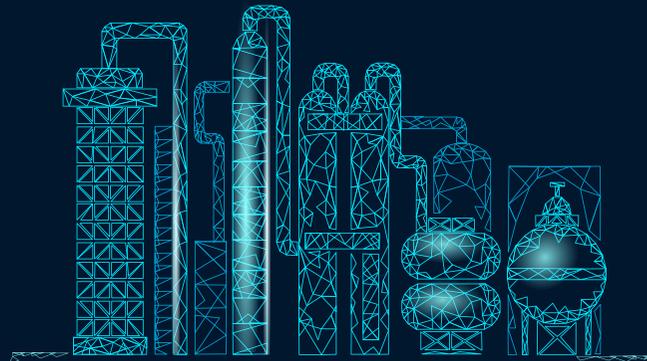
1. Delayed coking units
2. Resid hydrocrackers
3. Desulphurisation (including vacuum residue desulphurisation and hydrotreating)
4. Adaptation of refinery process to lighter crudes (and switching crude slates to prioritise low-sulphur feedstocks)

Delayed coking is a semi-batch process that converts “bottom of the barrel” vacuum residue into light hydrocarbons and petroleum coke. Quite simply, vacuum residue is heated in the furnace and fed into a coker drum where it thermally cracks, producing light hydrocarbons that are extracted from the drums and coke that deposits on the drum walls (later cut out using water jets).

Resid hydrocrackers involve vacuum residue and hydrogen being mixed at high temperature and pressure and then being introduced into a number of reactor vessels containing a hydrotreating catalyst. The mixed feed is contacted with catalyst inside the reactor vessels, this enables the conversion of the stream into lighter hydrocarbons and the removal of impurities, such as sulphur hydrogen and some aromatic compounds.

Distinctive risks – but well understood

Ben suggests “These technologies come with a number of distinctive risks but, having been in existence for many years, are well understood both in the refining and insurance sectors.”



DISTINCTIVE OPERATIONAL RISKS

Delayed Coking Unit	Resid Hydrocracker
The semi-batch nature of the coking process results in high thermal cyclic stress on the coke drums that can lead to cracks, deformation, etc. This is the most common form of failure.	Due to the high operating temperature and pressures paired with a viscous feed, typical equipment failures are the loss of feed pump or compressor.
Decreasing cycle time increases the throughput of the coke drum, however, can lead to greater stresses and higher risk of failure.	The exothermic nature of the hydrocracking reaction can result in ‘temperature run-away’ that can, in extreme cases, melt through the reactor walls.
During ‘cool down’ of the coke drum, an excessive rate of water injection can result in ‘drum bulging’.	Due to the presence of hydrogen, leaks in process units often results in devastating fires. This can give rise to extremely large property damage and business interruption claims.
A certain amount of coke builds up in the furnace tubes over time that requires periodic cleaning. Failure to properly maintain the furnace can result in the tubes completely clogging up, formation of hotspots and furnace tube ruptures or cracks.	

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Policy conditions relating to testing, commissioning and handover

The very nature of this type of capital expenditure is that it involves building on an existing site and alongside operational facilities. This invites a multitude of different construction risks, for example when moving equipment within operational refineries, but these pale into insignificance when considered alongside testing and commissioning when hydrocarbons are introduced to newly constructed equipment and when the new plant gets integrated into the existing facility.

Typically, with construction costs for these types of investment costing hundreds of millions of dollars, specialist Construction All Risk (CAR) policies are necessary to cover the construction project. These cover Property Damage and Delay in Start-Up (DSU) claims during the construction period, with the asset transferring to the insured's operational policy once the construction is complete. "It's this handover phase where owners and contractors need to take care to follow insurance policy conditions" suggests Alistair Lamb, Managing Director – Asia, Integra Technical Services.

The operational policy will normally incorporate a testing and commissioning clause which includes gateway criteria to allow newly constructed plant to be admitted onto the operational cover, such as:

- Mechanically complete;
- Testing and commissioning process complete;
- Performance tested to 100% of design criteria for entire plant for 72 hours;
- Official acceptance by the insured (formal handover documents signed);

Alistair goes on to explain that "The newly constructed asset must meet all criteria and then should be presented to operational underwriters so they can consider the additional asset risk and charge any additional premium due to the increased overall insured value."

Issues can arise when a proper testing, commissioning and handover process is not followed or proper presentation of the risk is not made. To reduce some of the risk, some insureds are choosing construction policies which include early operations coverage to provide a bridge between the construction and operational policies.

MEET THE AUTHORS



Ben Davis has an Honours Master's Degree in Chemical Engineering. He began his career as a loss adjuster in London in 2017 handling a diverse portfolio of onshore and offshore energy insurance claims. He joined Integra Technical Services in Singapore in 2020.
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Alistair Lamb is an experienced engineer with specialist working knowledge of rotating equipment, including gas turbines, power generation packages and compressors, along with experience working on offshore oil & gas platforms and within petrochemical facilities.
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SIX FACTS ABOUT SHIPPING FUEL QUALITY CLAIMS



Tom Wilson

Senior Adjuster - Marine & Energy

Tom Wilson started his career in the British Merchant Navy, attaining the rank of Chief Engineer. After he left the Merchant Navy he spent many years as Regional Director with The Salvage Association, dealing with all aspects of marine and offshore casualty claims and risk assessment. In more recent times he has provided Expert Witness and Litigation support services in all areas of the marine and offshore industry, including newbuild disputes, shipyard liability disputes, attendance at sea trials, bunker disputes, in-service casualties, machinery breakdown, performance related issues and cost.

Integrated caught up with Tom and he was able to offer six facts related to fuel quality claims following the introduction of IMO 2020 at the start of the year.

- 1.** IMO 2020 was predicted to lead to an avalanche of claims relating directly to fuel compliance, scrubber performance and wash water (from the scrubbers) issues. Whilst there have been disputes and insurance claims it has not been anywhere near as bad as predicted. Ironically, COVID-19 may have improved bunker quality, with better quality streams coming ex-refinery.
- 2.** Quality issues pre-IMO 2020, tended to be excessive catalytic (cat) fines in the fuel or contaminants such as fatty acids, phenol, styrene, excessive asphaltene or other non-petroleum contaminants. The introduction of IMO 2020 has had little or no effect on these.

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3. There have always been claims regarding the quality of marine bunkers, particularly Heavy Fuel Oils (HFO) which are derived from the residue left at the end of the crude oil refining process. As the refining process has improved in efficiency over the years, extracting more of the valuable lighter hydrocarbons, so the quality of the HFO supplied to vessels has decreased as the “bottom of the barrel” residue consists of less of the lighter hydrocarbons. The introduction of IMO 2020 demands increased fuel quality and is likely to reverse this trend. The result should go some way to reducing claims relating to bunker quality.

4. Marine fuel oils can be subjected to many different tests - the international standard ISO 8217 offers a package of tests with limits (maximum and minimum) on the various parameters and contaminants that may be expected in marine fuels. The charter party invariably includes a clause relating to bunker quality and defining that the bunkers conform to the latest version of ISO 8217. This has become the standard blanket-cover that gives some quality assurance to the industry. A typical example of a charter party clause would be “The bunkers shall be of a stable and homogenous nature and suitable for burning in the Vessel’s engines and/ or auxiliaries and shall comply with ISO 8217:2012 or any subsequent amendments thereof.” There are many criticisms and limitations of ISO 8217 and, like any standard, it cannot be forced on those who do not wish to use it. However, it can be used by arbitrators in bunker quality dispute cases and to establish industry current and best practice.

5. It is generally the charterer of the vessel who provides the fuel and when a claim arises due to a quality issue with the fuel, it is normally the charterers’ insurers or the P&I Club that become liable.

6. When dealing with incidents and potential disputes arising out of IMO 2020, obtaining copies of the following documents is recommended in the first instance:

- Ship Implementation Plan (SIP).
- Oil Record Book (Part I) & Engine Logbook showing all entries for internal fuel transfers, bunkering, retention and disposal.
- Tank plans and piping diagrams noting the condition of tanks, pipelines and other associated records (like line flushing, tank cleaning, etc).
- Records noting that segregation of fuel system tanks and pipework has been maintained, where necessary.
- Fuel supply document(s), bunker samples and Bunker Delivery Note (BDN).
- Fuel quality analysis reports.
- Written procedures for fuel changeover and associated records.
- Training records for crew and shore side personnel.
- Fuel Oil Non-Availability Report (FONAR), if applicable.
- Notes of protest and any notifications made to either PSC or Flag State.

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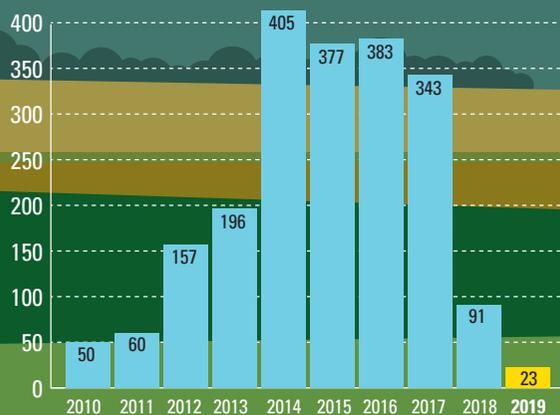
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UK COMEBACK FOR ONSHORE WIND



A decision by the UK's government has led to a dramatic reduction in new onshore wind power projects. With the reversal of that decision in March 2020 many are predicting a new boom for UK onshore wind with reports suggesting there are at least 86 projects in the pipeline. **Szen Ong**, Engineering Adjuster with Integra Technical Services, looks at the latest developments and considers some of the risk and insurance challenges.

Pressure from within the UK government led to a decision in 2016 to deny onshore wind the chance to bid for a price guarantee for the electricity they produce, known as the Contracts for Difference (CfD) scheme. The stark impact of that decision has been a huge reduction in the number of new onshore wind farms. From a 2014 peak of 405 to just 23 in 2019, and all but one of those had secured support from subsidy schemes before they were closed.



New UK Onshore Wind Farms (The Guardian graphic, source: Renewable UK)

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Toward net zero

CfD contracts offer owners of capital-intensive onshore wind farm projects a 15-year visibility of future revenue. It allows them to significantly reduce their cost of capital, become more competitive and, as a result, push down their prices. So, it was not surprising to see the onshore wind sector celebrate the UK Government's announcement in March 2020 that there would be a new CfD auction for onshore wind in 2021.

Increasing the renewable energy generation capacity is essential for the UK to meet its 2050 net zero ambitions. In 2019 onshore wind farms supplied about 10% of the UK's electricity, with just over 13 GW of installed capacity – the equivalent of powering more than eight million homes. According to the UK Government Committee on Climate Change onshore wind capacity needs to increase to 35 GW by 2035, which means adding some 1,400 MW a year.

A pipeline of projects

Firms, that include Scottish Power and Vattenfall, were eagerly awaiting the re-inclusion of onshore wind into the CfD scheme. There are believed to be a pipeline of 86 wind farm projects with planning permission, which could be generating electricity by the mid-2020s. Among these is a 50-turbine wind farm in Southern Scotland which Vattenfall has confirmed will be up and running by 2023. When you take into account the retirement of older projects, in order to hit emission targets new wind farm development is going to have to, at least, match the annual average of 208 new wind farms set over the last decade.

It's predicted that the vast majority of these new onshore wind farms will be in Scotland. Not only is it the windiest country in Europe, but a more favourable planning framework and clearer guidance make this location more attractive for investors. In fact, of the 86 onshore wind farms referenced, 76 are in Scotland with 11 in Wales and one in England.

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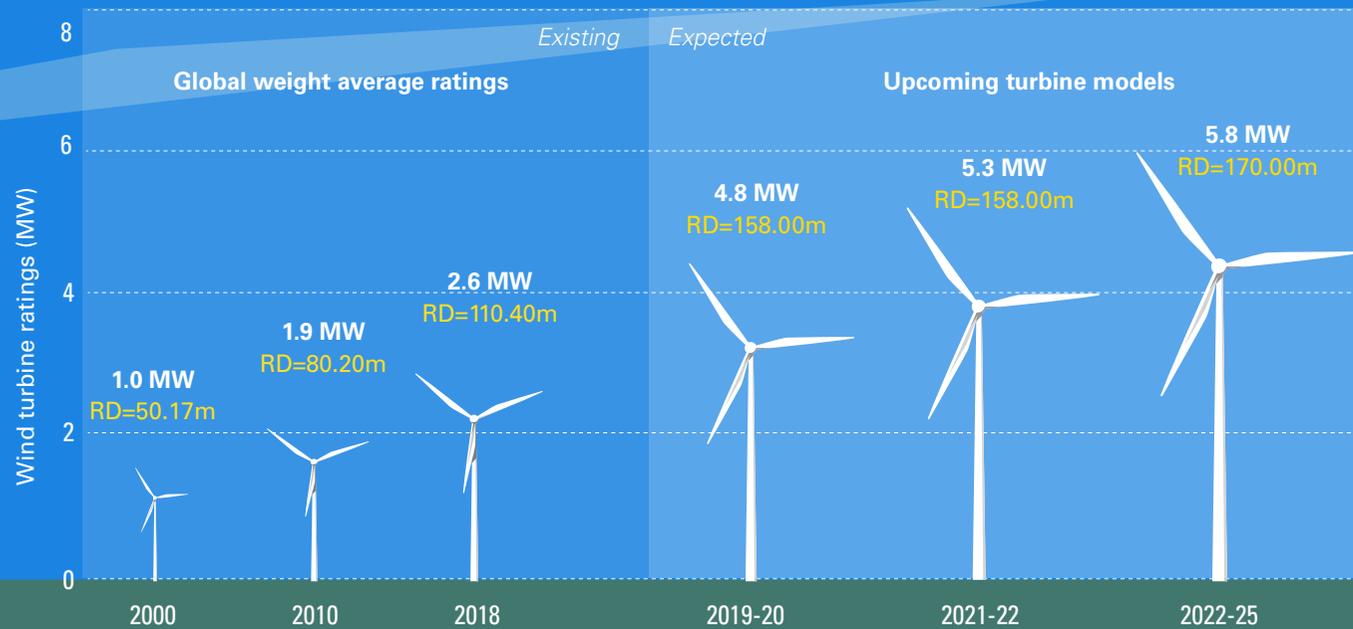
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Wind turbine size

Over the years onshore wind turbines have become larger as technology improvements enable them to harvest more energy. A wind turbine's size is a combination of two factors, the hub-height and the rotor diameter. High hub height exposes the turbine to higher average wind speeds, and larger rotors capture more wind. The diagram opposite shows that in 25 years the rotor diameter is projected to increase by 350% and be generating almost six times as much electricity.



Source: (IRENA, 2019c; Wind Power Monthly, 2019, 2018).

Transportation

Whilst new technical challenges and failure modes could be introduced with these new larger turbines, perhaps the biggest challenge is getting these components to the farm site. It can affect business interruption insurance and risk management considerations during both the construction and operational phases of the wind farm, especially when you consider that most wind farms will be in remote parts of Scotland and Wales.

Many components are wide, long and extremely heavy. For example, large wind turbine blades can span 50-80 metres and the turbine nacelle (where the blades are mounted) can weigh around 85 tonnes or more. Working out the access route can take months of meticulous planning.

Some examples include understanding weight or height restrictions on the access route; planning for temporary traffic management; and sometimes the removal of street furniture and hedgerows and the temporary widening of roads.

Sparing philosophy

For most of the established wind turbines, manufacturers and operators will have a good understanding of the failure rates of different components and typical downtime resulting from their failure. Often wind turbines replacement parts must be sourced from Europe or further afield and this can cause significant downtime especially where parts are made to order. We've seen as much during the current COVID crisis with some claims experiencing prolonged business interruption due to difficulties sourcing

components as countries and manufacturing sites were in lockdown.

This has affected many industries, not just renewable energy, but with renewable energy becoming a larger and more important part of the energy mix it does raise the question as to whether wind farm operators should look to introduce sparing policies in a similar fashion to the offshore oil and gas sector.

The combination of a robust sparing philosophy and manufacturers electing to work with Tier 1, 2 & 3 suppliers that are based geographically closer to the project site will, undoubtedly, improve energy security and mitigate business interruption risks. It would be interesting, therefore, to see how this would be received by insurance underwriters and whether, over time, it led to more favourable insurance terms. ■

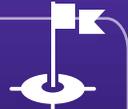
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