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Making progress

2019 has been a somewhat uncertain year, and with a stalled Brexit there's still little sign of a more stable and settled period on the horizon for businesses.

And now with the turmoil of a general election before Christmas, the best efforts of our industry bodies to get their messages across relating to the vital role oil can play in the decarbonisation process, is in abeyance.

In Cape Town last month, there was fighting talk. Speaking during Africa Oil Week, NJ Ayuk, CEO of Centurion Law Group and the executive chairman of the African Energy Chamber said:

"Africa's time to grow and develop is finally here, and it will be funded by its natural resources. While there is demand for hydrocarbons, there will be production; demonising oil and gas companies is not a constructive way forward on energy transition."



that, but you'll breathe fresh air in the darkness " with many oil suppliers across the UK, Ireland

In common

Celebrating its 50th anniversary, the Humber refinery is not only the UK's sole coking refinery, it is also Europe's largest producer of anode coke. Fuelled by growing demands of mobile phones and electric cars, these markets are forecast to keep growing well into the 2030s

and beyond, Africa is seeing a shift in

the supply and demand dynamic. Oil

diversifying their portfolios to include renewable energy assets with many at

& gas companies are restructuring and

the forefront of research & development

into new technologies helping to exploit

It's certainly true that 'no one

is too small (or too big) to make a

difference' with many in our industry

agreeing that everything does need

to change, and that this change has

In an article covering Africa Oil

"Energy is the catalyst for growth,

Week, South Africa's energy minister,

they even want to tell us to switch off

all the coal-generated power stations,

warm and bright festive season!

until you tell them, you know we can do

Wishing all Fuel Oil News' readers a

already started; what remains in

question is at what speed?

Gwede Mantashe said:

renewable resources.

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FuelOilNews

The independent voice for the fuel distribution, storage and marketing industry in the UK and Ireland.

4-5, 7, 9 NEWS

FAME – more awareness of issues; UKIFDA dinner; People Moves; The Fuellers: OnlineFuels in Germany; Acquisitions for Rix Petroleum and Aztec Oils

11 PORTLAND MARKET REPORT

'Never lose its value....you're joking aren't you? Oil is so vesterday.'

12-14 IN CONVERSATION

The Humber Refinery – 50 years and beyond

15-16 IRISH NEWS

Malone Oil Products - ready for what the future holds

17 KNOWLEDGE

Nurturing talent

18-19, 21 TSA CONFERENCE REPORT

22 ANALYSIS - Fuel fraud - the facts

23 INSIDE OUT – The impact of IMO 2020

24-25 TRADE & TECHNICAL Tank app and guide, pipe repairs, corrosion management

26 PRICING PAGE

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Page 34 for Fuel

Refiners, Wholesalers

and Blenders



SEE PAGE **18 FOR THE** 2019 TSA CONFERENCE REPORT

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Fuel Oil News | December 2019_3

FAME – more awareness of issues

UNDER THE RENEWABLE TRANSPORT FUELS OBLIGATION (RTFO), THE PERCENTAGE OF RENEWABLE CONTENT IN THE UK'S FUEL POOL WILL BE UP TO 9.75% BY JANUARY 2020. THIS MEANS THAT FAME CONTENT IN BOTH OFF-ROAD AND ON-ROAD FUEL IS BEING PUSHED TO THE MAXIMUM LIMIT PRESCRIBED BY THE FUEL STANDARD – 7% BY VOLUME.

ith reports of '*farmers struggling with diesel quality problems*' appearing in the press, in mid-October, UKIFDA reissued its guidelines and information as to the management and storage of sulphur free gas oil (SFGO).

"Our advice has always been to give the tank a specialist clean before taking delivery of any biofuel," explained Tony Brown, UKIFDA technical manager.

- Fuel should be kept clean and dry with regular tank checks carried out
- Remedial action should be taken if any water, dirt, mould or growth is present
- Filters, pipework and seals should be checked on a regular basis
- Filters should be replaced after every two/three deliveries
- Storage time of FAME blended fuels should be limited
- Tanks should be kept topped up to reduce air which can draw moisture
- If sediment or bacterial growth is found, seek professional help Home remedies such as fungicides or microbiological killers may do more harm in the long run. Those that do work may kill the bacteria but the dead growth on the bottom of the tank can also build up and cause issues.

Looking into the matter further, Fuel Oil News contacted Neil Ryding, managing director at Fuel Additive Science Technologies (FAST) who reported that the company is '*busy responding to a continuing stream of enquiries relating to blocked fuel filters on tractors*'.

"We received our first phone calls reporting blocked filters, stable foam, scum, white blobs and 'sheen' at the end of July, with the first samples received on 2nd August," said Neil.

"Between then and October we were sent over 100 fuel samples from fuel distributors or end-users.

"Whilst for the most part the fuel samples we are receiving look clear and bright, with nothing obviously wrong; closer inspection is revealing lots and lots of particulate matter." "This is being seen not just on the samples from vehicle and local tanks but further back in the supply chain too.

"Initially the samples came from the south east and East Anglia, but south Wales, Somerset and Dorset also seem to be badly affected. Latterly, complaints from Scotland are growing by the day," added Neil.

Reports of '*massive problems*' due to particulates in fuel filters resulting in tractor fuel starvation in many areas, saw FAST scrape off the contents of many fuel filters for closer analysis. Such was the demand for fuel filters that stocks were running low at some tractor manufacturers.

"Analysis of the filter contents is proving to be difficult and is taking longer than expected – there is, apparently, no single common cause of filter blocking. To date, therefore, we have been very reluctant to jump to a conclusion or to offer a solution."

Speaking to Neil on 18th November, it was hoped that FAST, and others who are carrying out similar test work, would shortly be able to report more fully.

"The origins of the problems do seem to coincide with the dramatic increase in FAME content of off-road fuel," explained Neil.

"The limit of 7% by volume is now being approached consistently and sporadic problems are now also being reported in road diesel. Being a powerful solvent, FAME comes with a strong detergent cleansing effect but whether this is the only or root cause of the issue remains to be confirmed."

Alternative fuels such as HVO and Shell GTL are available, although not as widely as those containing FAME, with an additional cost.

Gas oil & biofuel workshop

Taking the initiative and holding a gas oil and biofuels workshop at the Grangemouth refinery last month, the Petroineos workshop was designed to cover all aspects of gasoil fuel quality, with particular focus on the addition of biofuel in gas oil. See the January 2020 issue for a full report.

A great line up at the UKIFDA dinner

 elebrating the 40th anniversary of the former Federation of Petroleum Suppliers, members of the UK and Ireland Fuel Distributors Association (UKIFDA) came together at Level Twenty-Five at the Cube in Birmingham to enjoy a celebratory dinner at the Marco Pierre White Steakhouse
 framed by panoramic views of the city.



Past presidents – David Prince (Prince Petroleum), David Hodge (Ribble Fuel Oils), Malcolm Hunt (Brisih Benzol), Nick Hayes (Nick Hayes Oil Products), Duncan Grant, (Certas Energy),

Mark Nolan (Nolan Oils) and Steve Davis (Midland Fuel Oils)

PEOPLE MOVES

sponsored by

• After a 40-year career with **BP** and over nine years as group chief executive, **Bob Dudley**, 64, is to step down as group chief executive on 4th February 2020, retiring on 31st March.

"Bob has dedicated his whole career to the service of this industry," commented BP chairman Helge Lund. He was appointed chief executive at probably the most challenging time in BP's history. During his tenure he has led the recovery from the Deepwater Horizon accident, rebuilt BP as a stronger, safer company and helped it re-earn its position as one of the leaders of the energy sector. This company – and indeed the whole industry – owes him a debt of gratitude."

Bernard Looney, 49, currently chief executive, upstream, who will succeed Bob as chief executive on 5 February said:

"Our company has amazing people, tremendous assets, and a set of core values that guide our actions, but most of all we have a desire to be better. I look forward to tapping into that desire and building on the strong foundation that Bob has built as we meet society's demand for cleaner, better energy." **Lamar McKay**, currently deputy group chief executive, has agreed to serve as chief transition officer. Commenting on the appointment, Bob said: 'I have no doubt that Lamar will thoughtfully lead BP through the transition to a low carbon future.'

- With effect from 1st January, **Huibert Vigeveno** will become downstream director at **Shell**, succeeding John Abbott who retires on 31st March after 38 years' service.
- Andrew Watson, fuel cards director at Watson Fuelcards (World Fuel Services) is leaving the company at the end of December to pursue a new technology venture.
- Henry Simpson, formerly with Adler and Allan, is now a director at Tokheim Solutions UK and Cameron Forecourt.
- John Banister is now regional sales at Aztec Oils which recently completed the acquisition of Caldo Oil's facilities in St Helens, Newton Abbot and Rhuddlan. The Caldo trading name and the bulk fuel business have been acquired by NWF Fuels. (see page 9)
- Gulf Retail has appointed Myra McPartlin as regional manager, south east. Previously area business manager in Scotland and the north west, Myra, who has a master's degree from Trinity College, joined DCC's graduate programme before joining Certas Energy in 2016. 'Myra has proven her retail and managerial credentials and we are delighted to promote her," explained Craig Nugent, head of dealer sales.'
- Drew Stevenson has been appointed energy sector leader at PwC UK, succeeding Alan McCrae. 'As the energy transition gathers momentum and society drives towards a lower carbon future, we are supporting our clients in addressing this critical shift.'
- Stephanie Samuel has joined A&D Publishing and Eleven Recruitment as content and social media executive.



Stephanie Samuel

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News

A truly unforgettable evening

In October, Berkshire-based fuel distributor, Carrie Marsh, who runs Marsh Fuels with husband Dave, was installed as senior warden in the Worshipful Company of Fuellers.

"The installation and court dinner took place at The Mansion House, the home and office of London's Lord Mayor, which is unquestionably one of London's most spectacular settings," said Carrie.

"On this very special occasion, we were privileged to welcome our new Master, HRH The Earl of Wessex.

"With a receiving line that spiralled down an elegant stairwell, the evening continued with a drinks reception before we entered the elaborate Egyptian Hall. Having said grace, the room enjoyed what can only be described as an ambrosial set of courses!

"Our new Master, HRH The Earl of Wessex, who addressed the room with much jollity, encouragement and gratitude, acknowledged the role which the Fuellers continues to play in shaping future energy," added Carrie.

"It is an extraordinary honour to be your Master and a considerable responsibility," said HRH The Earl of Wessex.

"We need young people, we need their imagination and passion to find and deliver the solutions, so we must inspire them to acquire the right skills and spirit."



Carrie Marsh – now senior warden in the Worshipful Company of Fuellers

Addressing social and environmental issues, the Fuellers has a trust fund which supports STEM focused charities.

"I look forward to an energetic, highly charged and fun year. God bless you and the Worshipful Company of Fuellers."

Taking place on Wednesday 20th November at the Royal Society, the Fuellers' inaugural *Future Energy Conference* had a number of presentations and discussions from keynote speakers, including Spencer Dale, BP group chief economist, Louise Kingham, Energy Institute, Dame Mary Archer and John Loughhead, chief scientific advisor, BEIS

OnlineFuels – now live in Germany

his time last year we announced that we were partnering with Shell Deutschland to expand OnlineFuels to Germany," writes Sam Hunter, marketer.

"Now, less than a year later, we are thrilled to report that the platform went live on Tuesday 15th October, with transactions going through on that same day.

"The principles of the German platform remain the same as the UK version, with it being an open and independent digital marketplace for the wholesale of heating and motor fuels. Built to streamline the connection between buyers and sellers, the ease of trading is advantageous for both parties.

"Since the start of the partnership with James Stairmand and Marc Noy as managing directors, the team has grown to include La-Kahina Waldrich, Johannes Gerdes and Anja Vinzelberg in the Hamburg office.

"To see such an inviting uptake from distributors and suppliers in the German market proves that OnlineFuels are on the right track and providing solutions to some of today's industry problems.

"As the teams continue to grow, so does the platform and the capabilities of what it can do to make the life of suppliers and distributors in the downstream oil market easier.

"The growth and innovations of OnlineFuels is a story worth following."



Check out the UK platform at onlinefuels.com

A change of perspective

aking advantage of the panoramic view at the UKIFDA dinner – Fuel Oil News editor, Jane Raphael was delighted to catch up with David Hodge (I) and Steve Davis.

This summer both sold their respective family-run fuel businesses – Ribble Fuel Oils, which celebrated its 50th anniversary in 2017 and Midland Fuel Oils, which has been in business for over 25 years – to NWF Fuels.



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News

Rix Petroleum acquires K9 Fuels

River Petroleum, which already has operations at Immingham and Spalding, has extended its coverage in the East Midlands with the acquisition of Lincolnshire business K9 Fuels, for an undisclosed sum.

The move extends Rix Petroleum's coverage in Lincoln, Market Rasen, Gainsborough, Horncastle, Louth, Spilsby and Retford, and enables the business to push into Worksop, Newark and Nottinghamshire for the first time.

Paying tribute to former owners Ken and Ann Shingdia who ran the business for 10 years before deciding to retire, Duncan Lambert, managing director of Rix Petroleum said:

"Having developed K9 into a thriving business with a loyal customer base, this fantastic business is run very much along the same lines as Rix Petroleum. We are both family firms with a deep-rooted commitment to dependable and friendly customer service.

"When we heard Ken and Ann had decided to retire, we immediately expressed an interest in the business because it sits between our



K9 Fuels is pleased to have secured a sale to Rix Petroleum, another local and family owned business

other Lincolnshire operations, extending our coverage to include mid-Lincolnshire and west into Nottinghamshire."

Under the deal, all the staff at K9 Fuels will continue to work at the business.

The move also creates two new jobs, including a business manager role, which will be filled by Steve Ella, and a new driver role. The tanker fleet is to be updated with state-ofthe-art technology and branding that reflects both the K9 Fuels and Rix Petroleum names.

The move also sees products and services available from the Gainsborough business extended, as customers will now be able to get access to boiler repairs, replacement tanks, lubricants and AdBlue.

"We feel privileged that Ken and Ann

have chosen us to take that business forward. We intend to make the transition as smooth as possible so customers can be assured of complete continuity of service."

"We are pleased to say that we have been able to secure a sale and pass the full operation over to Rix Petroleum, another local and family owned business," added Ken Shingdia

"We have complete confidence that what we have worked hard to achieve will continue in the safe hands of a company that shares our own values and attitude towards customer service."

Read the K9 Fuels story in the January 2019 issue of Fuel Oil News

An exciting venture

erbyshire-based Aztec Oils has acquired Caldo Oils' facilities (see page 5).

"This venture really excites us," said Mark Lord, Aztec's managing director.

"It gives us a great opportunity to develop our retail packaged range, offering both Aztec branded products, whilst at the same time as growing our private label customers."

The acquisition will see Aztec overseeing manufacturing at the site including the Hallett Steam Oils brand under the Multispec name.

NWF Fuels will acquire the Caldo trading name and the bulk fuel business as a separate entity.



A new venture for Aztec Oils which embarked on a ± 1.2 million development plan for its Bolsover site in 2018

A warm Spanish welcome

Rettlewell Fuels, Chandlers Oil, WCF Group and Northern Energy. The group, which visited Cobo's Santander tanker manufacturing facility in October, enjoyed a most informative and sunny visit.



Fuel Oil News | December 2019_9

Our Humber Refinery's premium coke formulations are already powering electric vehicles

> We're celebrating 50 years of providing the UK with essential fuels by looking ahead to 50 more. With lower emissions, renewable fuels made from waste oil, and world leading premium coke formulations powering electric vehicles and smartphones. We look forward to an even brighter future.



Providing Energy. Improving Lives."



PORTLAND MARKET REPORT

"A METHOD OF CREATING CLEAN, LIMITLESS ENERGY WITH NO END, IS SURELY A FITTING GIFT?"

December update

"Melchs! How's it going Wise Man?"

"Not bad Balzo", said Melchior, turning to Balthazar.

"You heard the news about the Star in the East...we better get going"

"Roger that Magi No 3, I'll get the taxi ready or do you want to go in your car?"

"No man", interrupted Gaspar. "We'll go on my scooter. Melchior's taxi won't get into Bethlehem city limits, not since Uber paid off Herod. And your old banger of a diesel Balzo – no way can we start polluting the stable area with that thing. Not unless you stock up on AdBlue and that don't exist for another 2,000 years – so we better take my scooter. It's electric don't you know and when we get there, we can beep the hooter to let everyone know we've arrived. Melchs, you can puff on a cigar on the way or even wear a Playtex bra – all depends on which primary school you went to."

"I'll go for the cigar," replied Melchior. "But dudes, we need to think about gifts before we go. I'm thinking of taking some oil for the young kid. Doesn't smell as nice as Frankincense, but very useful commodity in this part of the world and it'll never lose its value I reckon".

"TURNS OUT CLIMATE CHANGE HAS MELTED ALL THE ICE AND TURNED FROZEN 2 INTO A DISASTER MOVIE"

"Never lose its value...you're joking aren't you?!" said Balthazar. "Stick with Frankincense. Oil is so yesterday. Just ask some of the boys in the Arabian Gulf, desperately trying to flog their oil company as we speak. Having a right old time of it I hear. Only going to get a couple of trillion, which is nothing when you consider how many wives their Royal Family has to keep. No mate, this is a young kid we're talking about and all young kids love a Disney film, so I'm going to get him the new Frozen 2 Movie. It's that or Myrrh and the truth is I don't exactly know what that is. Plus, from a grammatical viewpoint, I object to the random use of the letter "h" at the end of the word..."

"Bad choice, B Dog" said Gaspar. "Turns out Climate Change has melted all the ice and turned Frozen 2 into a disaster movie. That's going to be traumatising for any child. Why don't you take him a battery? Just imagine the kudos of going electric?!"

"No good", replied Balthazar. "Bethlehem ain't putting no charging points in until 2022 earliest. And besides, the limited range available is never going to get him from Bethlehem to Nazareth. That's well over 150 miles. I think I'll just have to go with Myrrh and live with the "h" at the end".

"But what about you Gaspo", said Melchior. "What will you take?"

"Well I've got to say that unlike you two", replied Gaspar, "what with your weird gifts that nobody's ever heard of and let's face it, both of which border on the insulting. Well with me, tradition says that I take Gold; useful yesterday, useful today and useful in the future. So, I should really stick with that. But in this day and age, even gold doesn't feel woke enough to get many likes on social media. So, I was thinking along the lines of getting the little one a Tokamac Fusion Reactor. That's a mini sun to you two, my non-learned friends. If the young lad is as special as I think he is, then a method of creating clean, limitless energy with no end, is surely a fitting gift?"

"Woah! Sounds a big ask, transporting that big bad boy on a scooter Gaspar", said Balthazar. "Maybe we should take my diesel estate after all. The boot space is magnificent"

"He's right Gasp", added Melchior. "If we are going to transport something that hits 100 million degrees C, we probably need to cover it with something like an old blanket. That way, Herod's goons won't see it and will let us through".

"Fair point" said Gaspar. "Let's do that. We'll just have to stock up with loads of AdBlue from those guys at Portland (in 2,000 years)".

And so, it was decided that the Three Wise Men went to Bethlehem bearing gifts of Frankincense, Myrr(h) and a nuclear fusion reactor, that might one day be the answer to all our energy problems.

Happy Christmas one and all!

For more pricing information, see page 26

Portland Fuel Price Protection www.portland-fuel-price-protection.com



The Humber Refinery – 50 years and beyond

When it was built in the late sixties, Conoco's new UK refinery on the Humber was designed in the style of a US refinery and incorporated an onsite coking plant, enabling it to upgrade 100% of the barrel. Among other notable differences in those early days were just one canteen for all staff and an open-door communication policy, which removed the need for union contracts.

Opened in July 1969, Humber was designed to refine Libyan crude, which is sweet and low sulphur, with very few impurities. Today's crude sources include the North Sea, which continues to be an important area, along with Russian and US crudes.

"These decisions have certainly stood the test of time," said refinery manager, Darren Cunningham who, having gained a chemical engineering degree at the University of Birmingham, joined the refinery team in 1985.

Fuel Oil News editor Jane Raphael met with Darren, Nina Stobart, external communications and public affairs, and Anna Gibbs, London-based brand manager, marketing, to discover more about present and future refinery operations.

Coking

The Humber refinery is not only the UK's sole coking refinery, but also Europe's largest producer of anode coke. It is also a world-

scale producer of specialty graphite cokes for electrodes. Since it took off in 2013, the production of graphite coke for lithium-ion batteries has grown substantially. Fuelled by the growing battery demands of mobile phones and electric cars, these markets are forecast to keep on growing well into the 2030s.

"The refinery greatly benefits from this superior grade of coke which is also used for the steel industry," explained Darren.

"As diesel and gasoline demand declines, these products have the advantage of being much sought after in an increasingly electric world."

Marketing

70% of the light oils produced by the refinery go into the UK market, supplying the JET network and wholesale customers of Phillips 66 Limited.

With a desire to sell as much to the inland market as possible, the refinery remains keen to grow volumes of low sulphur products through further investment in its facilities. Not only supplied to the UK market, gasoline is also exported to Europe, the Middle East, Africa and South America.

Recent investment in the UK's JET brand has resulted in new-look forecourts and a branded premium fuels offering, JET ULTRA. "We undertook extensive consumer research before embarking on a 12-site reimaging pilot," explained Anna Gibbs.

The initial customer feedback has led to a simple, clean, safe and well-lit forecourt, with 91% of people surveyed noticing a significant improvement.

The new-look image will be rolled out to all 300+ JET sites over the next few years.

Safety

"With one of the best safety records in the industry, our safety culture will always be the top priority," said Darren.

Taking a tour of the refinery, which is equipped with state-of-the-art emissions controls, the site's organisation and tidiness was evident.

Maintenance is top priority and every year substantial capital investment is made in support of a continuous replacement programme.

"Backed by our own awareness of corrosion, we keep in touch with lessons learnt across the industry and the latest developments, and we use risk-based inspections to minimise issues," explained Darren.

"Inspection techniques have made considerable advances, with drones, lasers, wireless technology, mobile computers





and smart phones and, of course, planning maintenance work is now assisted by real time information.

Biofuels and decarbonisation

"We accept the need to reduce the impact of human activity on climate change and are committed to doing our part to reduce carbon emissions. Our industry produces the products that society needs to sustain our modern lifestyles today and in the foreseeable future – we are part of the solution, not the problem. However, we accept the need to reduce our carbon intensity and that will mean doing things differently, including more waste recycling, investigating the use of both 'blue' and 'green' hydrogen, as well as carbon capture and reuse or storage. We've already made a start at Humber Refinery, being the first refinery in the UK to reprocess waste used cooking oil to make biofuels and in producing coke for lithium-Ion batteries. This material is essentially pure carbon and is 'trapped' inside the battery so does not contribute to atmospheric emissions. It supports the growth in market demand for electric vehicles. We are also in discussions with other neighbouring businesses about how we can work together to reduce emissions in our area."

Last month both Darren and Nina spoke at Energy & Clean Growth in the Northern Powerhouse. This flagship energy conference showcasing the achievements and

Continued on page 14

Humber Refinery Facts

- Crude capacity 221,000 bpd (barrels per day)
- Nelson complexity factor 11.6
- The site occupies 480 acres in Northern Lincolnshire and directly employs a workforce of 1,100 people, with 700 permanent staff and 400 regular contractors.
- The only coking refinery in the UK, the
 Humber is one of Europe's most complex
 and cleanest refineries. This enables
 the refinery to achieve a Clean Product
 Yield of 81% this is the proportion of
 Humber's products which have a low
 sulphur content, including road fuels, non road fuels (jet, heating, marine) and low
 sulphur chemical feedstocks.
- 100% of the barrel is converted, meaning that everything is upgraded from crude oil into either finished products, chemical feedstocks or intermediate products which can be blended into finished products.
- A range of products are produced including petrol, diesel, jet (aviation) fuel, heating kerosene, LPG, low sulphur marine fuels and multiple grades of petroleum coke which are used for various products and processes, including the manufacture of electrodes for electric car and smartphone batteries and the recycling of waste aluminium and steel. The refinery also produces various chemical feedstocks which are used in the manufacture of everyday products including plastics, cleaning products and makeup.
- As the refinery looks to provide the energy of the future, the Humber now processes waste oils with crude oil to reduce the net carbon dioxide emissions from its fuels. £1.5 billion has been invested in the Humber refinery since 2005 to improve our environmental performance and position the refinery for the future.
- Products are transported to over 20 locations across the UK via ships, pipeline and trains.
- The Humber refinery produces 14%
 of the UK's road transportation fuels*,
 although as a company it supplies 16%
 of the UK's road fuels. *This number
 includes gasoline, diesel and derv, per the
 government statistical categories.

Continued from page 13

opportunities for energy, clean growth and decarbonisation in the north of England, was organised in conjunction with the Department of Business, Energy & Industrial Strategy's Green GB & NI Week.

Teamwork

"We are very much one team with one purpose," said Darren.

Given the current fossil fuels backlash, FON asked if attitudes had changed more recently, making it harder to attract new or younger members of staff.

"The Humber Refinery remains a preeminent employer in the area," explained Darren.

There are presently 12 trainees in post replacing retirees, with no difficulty experienced in either hiring apprentices or recruiting the best graduates from Russell Group universities. The refinery also attracts interns on sandwich courses and has very low attrition rates. The refinery employs over twice the national average of female engineers, with diversity encouraged in the workforce.

Taking a proactive stance with respect to future employees, there is an outreach education programme which gives presentations at local schools. "The refinery has always had a very strong focus on both community engagement and philanthropy," said Nina Stobart.

"Our outreach programme gives us the opportunity to highlight the industry's contribution to society and the role that it can play in our energy future and careers. We are deliberately forward looking and remain very positive about fuelling the future."

Doing things differently

"To ensure its longevity, my job is to play to the refinery's obvious strengths which, in turn, will enable the Humber Refinery to remain at the top of its game as one of the UK and Europe's most efficient," said Darren.

"As an industry I believe we must work harder when it comes to decarbonisation. On the current trajectory it is essential that we reduce our carbon emissions, primarily by using our energy more wisely and sensibly. However, I believe in the long term that fossil fuels will still be needed as part of the energy mix to provide more of the world with access to cheap, abundant energy.

"Our industry does recognise that there is a need to do things differently; however, a reasonable balance is essential. We fully appreciate the direction of travel and the need to reduce carbon, but the answer does not lie in placing disproportionate burdens on industries like ours. All sectors of industry and society need to work together if we are to achieve our decarbonisation aims.

"The future is bright for forward-looking organisations which are responsive to change and can meet society's needs.

Making innovations every day, the Humber Refinery is now tailor-making new products for new markets, reprocessing waste materials and addressing the shift to a lower carbon future.

"Whilst still providing security, reliability and affordable products to society, the industry will continue to evolve and contribute to decarbonisation goals. We're here to stay and keen to get our message across," added Darren.



Taking a guided tour with Mark Welfare – Jane Raphael (I) and Anna Gibbs

As we mark the refinery's 50th anniversary, Phillips 66 Limited has never been in a stronger position to meet the needs of UK customers. Since 2015, we have enjoyed a period of sustained growth 13% above the market and our gasoline business has grown by 35% since 2012 – an impressive result when compared to an overall market decline of 12%.

We think this growth can be attributed first and foremost, to the success of the businesses we work alongside and the customers we supply.

Meeting our customers' needs for quality fuel that is reliably supplied where and when it is required is also key and our UK business is ideally positioned to do so through the highly effective cross functional collaboration of our teams. From our refining and production planning team at Humber Refinery to our marketing and supply team in London – sitting alongside our commercial traders who are able to import product from across the globe.

Our experienced team of sales managers offer industry-leading customer service and support and we work to develop new value-added solutions, such as our online pricing portal, ensuring that our customers have access to live pricing information and are in control of running their businesses most efficiently.



Furthermore, we continue to secure investment in the core terminals that we supply from. Bramhall Oil Terminal and IPC have benefitted from the addition of super unleaded, as well as further additive capability. We have also invested at the WOSL Terminal in Kingsbury to optimise the additive provision across the terminal's retail racks. And the ISCO Terminal (adjacent to IPC) has benefitted from additional biofuels storage capacity.

The Humber Refinery has played a vital role in the UK's energy resilience over the past 50 years. It has also been a critical factor in the continued growth of Phillips 66 Limited over the past five decades and will undoubtedly do so for many years to come, enabling us to service the UK's future energy and fuel needs.

Mark Todd, wholesale business manager, Phillips 66



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Irish News



A steadfast and robust fuel business was born in County Louth when Malone Oil Products was set-up by Patrick (Patsy) Malone in 1981. Becoming a limited company in 1990, over the years this family business has steadily grown across the greater Ardee area.

Now in its third generation, Patsy's son Padraig has been at the helm for many years. Under Padraig's watchful gaze, his son, Daniel, is now destined to take over the reins to drive the business into the next phase of development.

Whilst Padraig's three daughters Lisa, Emma and Claire have spent time working in the business, they have since '*branched out to paddle their own canoes*'.

The Malone Oil Products team also includes Marian Malone, Padraig's wife who works in the office alongside administrator, Lorraine, and two tanker drivers.

Early days and recent investment

Coming from humble beginnings at a site on the northside of Ardee on the N33, Malone Oil Products has been a Texaco distributor from the word go.

In June 2018 the business expanded with the acquisition of a two-and-a-half acre site, adjacent to its original premises. The site's development, which commenced in 2018, was finished earlier this year with an official opening taking place this September.

Formerly equipped with an old top loading gantry, Malone has invested heavily in the new depot which now features a concreted yard, new offices, new tanks, bund and fencing.

"There were a few teething problems at the start but now everything is working well and at full throttle, Padraig told Fuel Oil News' Irish correspondent, Aine Faherty.

"Everything is quicker and more efficient with all done with a pristine finish."

Alpeco's 3-arm skid loads diesel, kerosene

and gasoil on to Malone's tanker fleet, which also uses Alpeco equipment. Featuring LC M25 POD meters with new pumps rated at 1100 lpm, a Multiload II state of the art electronic register controls the simultaneous loading of all three arms.

"We wanted to consolidate what we already have; it's hard to say yet if it has brought in more business but it has made us more visible," said Padraig whose business delivers to commercial premises, agricultural green diesel and kerosene heating oil.

Continued on page 16



Formed in 1860 – members of the Ardee Concert Band played at Malone's open day

Irish News

Continued from page 15



(I-r) Daniel Malone, Padraig Malone, Jim Keenan, Shane McKenna, Tony Cassidy and Lorraine Crosbie

Coping with change

"With so many other home heating options available nowadays, the oil business is definitely under a lot of pressure. There's more energy efficiency and greater insulation, with boiler manufacturers changing to allow for this.

"The future is limited, and we will need to diversify, keeping our eyes open to what the

future brings," added Padraig.

Whilst Malone thankfully has loyal customers, pricing is so very important. As is the need to continue to facilitate delivery times and provide good personal service with the personal touch drawing customers back.

"Our drivers might bleed a boiler for a customer if it's run dry, for example," he says.

"And we try to be competitive on price."

One of the starkest changes noted since starting in business is the fall in the number of farmers. Where once we would meet ten tractors, there might now only be two or three. Another is the introduction of gas in towns which has decreased oil usage.

Driving costs up, checks on vehicles may be more stringent but, despite its administrative burden Padraig believes the Return of Oil Movement submission to Revenue has brought positive change to the industry. Reporting less washing of diesel around than four or five years ago, Padraig said that being close to the border in Louth, does still mean people cross over to avail themselves of cheaper kerosene.

Equipped with a new depot, the Malone team is ready for what the future holds and willing to tackle anything that comes its way!

IF YOUR COMPANY HAS SOMETHING TO CELEBRATE, PLEASE CONTACT IRISH CORRESPONDENT AINE FAHERTY (see pg 3)



Knowledge

Nurturing talent

ON 23RD JUNE 1919, A COMMITTEE OF INFLUENTIAL WOMEN SENSED A NEW DAWN. THE FIRST WORLD WAR HAD ENDED, AND A GROUP OF WOMEN, RANGING FROM DESIGNERS TO MUNITIONS FACTORY MANAGERS TO WIVES OF PROMINENT ENGINEERS, RALLIED TO FOUND THE WOMEN'S ENGINEERING SOCIETY (WES).

"One hundred years later, progress for women in industry has often felt stagnant,"

Below, Hetal Patel, marketing projects manager for the UK's largest annual manufacturing and engineering exhibition – Advanced Engineering – discusses the importance of women in engineering. Having celebrated the Women's Engineering Society's centenary earlier this year, Hetal 'finds the fact that only 11% of the UK's engineers are female is a tough pill to swallow' and asks what can be done to nurture talent in this milestone year?

The state of industry

'Not expected to rise any time soon', the UK has the lowest percentage of female engineers in Europe with only an estimated 8% of engineering and manufacturing apprentices being female; with figures plunging as low as 2% in the building and construction sector.

With the STEM skills shortage costing businesses £1.5 billion in recruitment every year, the UK needs to significantly increase its number of engineers with the goal being to employ around 186,000 recruits each year until 2024.

Role models

A lack of role models is often cited as a reason why women shy away from a career in this industry. However, the reality is that our engineering heroines are often unsung.

The pressures of war drew many women to the home front, only for them to experience rebuke once men returned. The founders of WES created a committee that promotes engineering as a rewarding profession for women as well as men, with the original members paving the way for women.

Renowned for her adventures as a pilot,



Amy Johnson was a qualified engineer and WES president from 1933-34. Johnson's campaigning inspired others such as Dorothy Spicer, who became the first person to hold all four types of aeronautic licenses.

Whether it's a female Doctor at the helm of the Tardis, or a woman encouraging the next generation of engineers, prominent role models are needed as figures of inspiration.

"WITH THE STEM SKILLS SHORTAGE COSTING BUSINESSES £1.5 BILLION IN RECRUITMENT EVERY YEAR, THE UK NEEDS TO SIGNIFICANTLY INCREASE ITS NUMBER OF ENGINEERS WITH THE GOAL BEING TO EMPLOY AROUND 186,000 RECRUITS EACH YEAR UNTIL 2024"

Striking the balance

We must strive for a more balanced workforce that reflects the diversity of our society and invests in the development of all talented workers.

McKinsey's *Delivering Through Diversity* report states that many companies struggle to increase the representation of diverse talent, yet data from 2017 found that companies in the top-quartile for gender diversity on their executive teams were 21% more likely to have above-average profitability than companies in the fourth quartile. To address the skills gap and boost productivity, companies need to act to diversify.

The next generation

According to professor Karen Holford, deputy vice chancellor at Cardiff University, and one of WES's most influential female engineers, 'the stumbling blocks are there from a very young age, such as girls not being given toy trains and cars to play with. It may sound like a small thing, but unconscious stereotyping is still holding girls back.'

"Schools must ensure that teachers have the critical skills to teach the subjects needed for a career in engineering. Finally, companies need to do more to promote flexible working for both men and women. This way we can ensure that the burden of childcare is equally shared so that women aren't out of the workplace for long periods. If we can solve these problems, I believe we'll see a big increase in women choosing engineering careers and, even better, staying in them."

Calgary-based Inter Pipeline is investing \$580,000 over three years to provide pre-apprenticeship training to women in Alberta's industrial heartland. The new funding supports ongoing efforts from recruitment to support after graduation to help women succeed in careers where they have been traditionally under-represented. Last year 186 women graduated from the Women Building Futures programme with 90% employed within the first six months of graduation.

Tank storage updates

As reported in this year's TSA annual review, HSE RIDDOR statistics show that the bulk liquid storage sector remains one of the safest industries in the UK with proportionally fewer injuries than almost all other sectors.

http://wwe.hse.gov.uk/statistics/industry/ index.htm

Attending the 2019 TSA conference and exhibition, Fuel Oil News was struck by more notable differences in speakers' views than found in previous years. Concerns about the industry's ability to maintain plant and equipment, reduce the number of smaller incidents and keep pace with decarbonisation were far more apparent.

One of TSA's key objectives has always been to encourage performance improvements and raise overall standards within its membership.

Starting with an upbeat keynote speech from IHS Markit's Giacomo Boati, executive director, oil markets midstream & downstream, had 'overall good news for the industry'.

As the industry looks to its future, visitors to the exhibition, which took place alongside the conference, were able to discover innovative new technologies advancing inspection and control techniques through the use of drones, lasers, virtual reality, robotics and smart sensors.



Choppy waters, the biggest driver for growth and peak demand

Those concerned with marine fuels are 'navigating choppy waters' said Giacomo. Remarking that marine bunker fuel in a low carbon world had to be the 'most disruptive global marine event for a long time', he sees the potential for some long-term uncertainty.

Whilst compliant fuel is likely to be the default initially, it will be very expensive for shippers. A big requirement for marine gas oil is expected in February/ March 2020, a move which could further tighten the middle distillate market. Reaching a peak in quarter two, marine gas oil's share will increase from 32% to 53%.

Longer term more scrubbers are expected to be installed. To date around 2,000 have been fitted with more due. Beyond 2020 Giacomo sees 'a strong adoption of scrubbers' in the meantime many shippers will continue to burn heavy fuel oil (HFO). A significant amount of non-compliance is likely, including around 8% in controlled areas.

A greater switch to LNG-fuelled ships is also foreseen. Whilst being a very clean fuel, it is not without infrastructure problems, however its importance to shipping will grow.

As the market adjusts, refiners could experience difficulties; shrinking HFO demand is likely to see HFO going into the power sector in the Middle East and South America.

Giaocomo sees 'high uncertainly around middle distillates' with the price potentially 'going through the roof'. On the positive side this could result in more opportunities for storage terminals. Recent attacks on Saudi facilities have led to concerns that similar events could put further strain on this market.

With both shipping and aviation miles needing to take a share of the decarbonisation burden, IHS Markit has been asked to investigate these non-road sectors as government takes a stronger view as to their regulation.

The biggest driver for growth and peak oil predictions

The biggest driver for growth in the fuels market is transportation. Giacomo sees continuous growth for fuels with China's gasoline consumption expected to peak around 2024. Optimistic about the continued use of current fuels, the adoption of alternatively fuelled vehicles is seen as having little impact, particularly in relation to HGVs even up to 2040.

Diesel remains the most economical fuel for trucks, and going forward there is much room for greater efficiency. In the medium-term demand for road fuels is seen as '*positive*' and '*relatively stable*'. With global peak oil demand around 2035 – '*we still have some way to go but demand will plateau*' with this being earlier in Europe and the USA.

The largest truck markets are China, Japan and the USA where there is presently no market for electrification; some vehicles run on natural gas, but the majority are still diesel.

Faster changes will be seen in other markets with an increasing uptake of electric/hybrid by 2025 with 30% pure electric by 2040. Globally, the car stock is likely to change very slowly due to the average car being kept for several years.

Presently fuels decarbonisation is progressing slowly but 10 years from now Giacomo expects 'a significant impact resulting from the strong sentiment against diesel across Europe', with IHS querying peak diesel in 2021?

In order to meet present demands, refineries are expected to run hard in 2020-2021 with Asia and the Middle East dominating in terms of new refinery runs. Seeing the biggest decline, Europe's gasoline surplus will tighten, gas oil dependency will decline whilst robust demand for jet fuel will see the deficit increase.

Bringing both risk and opportunity, global trade routes are expected to change as the fuels balance across the globe sees more disruption in the longer term.

Decarbonisation – the fourth industrial revolution

The next speaker was Dr Paul Logan, director of Chemicals, Explosives and Microbiological Hazards Division, HSE, who was eager to point out that decarbonisation will be 'a lot more rapid than the previous speaker has alluded to'.

Supporting the high hazards industry and ensuring regulatory approaches are in line with the government's industrial strategy, Paul spoke of the need for further regulation to change and adapt the UK's energy system to ensure it is clean, reliable and low cost.

Viewing decarbonisation as the fourth industrial revolution, '*it will change the way we live and work*' so it is vital that our regulatory system keeps pace.

Giving the good news that the UK, along with Sweden, is still one of the best places to operate and from a work perspective, is one of the safest countries in the world, HSE is however concerned by infrastructure and investment decisions for older plants such as refineries.

Creaking and showing their age businesses have the increasing challenge of keeping the oil and gas flowing whilst remaining profitable and sustainable in a declining market.

"We recognise the sector's maturity and the regulation knowledge of operators, we know the good sites and those that are less good," said Paul.

With too many smaller incidents caused by overspills and corrosion now occurring on sites, Paul reported 75 dangerous occurrences in 2018/19.

"Leadership is absolutely crucial for effective risk control. Operators need to invest in risk controls to bring down the number of incidents.

Heading to zero carbon, Paul spoke of cleaner fuels aspirations, including the possibility of injecting hydrogen into the UK's gas network. Much work is underway with hydrogen for both transport and heating, but as mentioned by the previous speaker, it poses significant challenges.

Another who sees shipping moving to LNG and hydrogen, as the move to 0.1% sulphur gets closer, the first LNG cruise liner is due to be launched in April 2020. HSE is working with the Maritime and Coastguard Agency to consider new refuelling standards at ports.

Creating a better place

Dr Jo Nettleden, deputy director and head of radioactive substances and installations regulation, Environment Agency, spoke of the desire to *'leave the environment in a better state than we found it'*.

Painting a somewhat bleak picture Jo, who is concerned about our EU exit, asked – 'will this result in reduced compliance or potentially insolvencies, leading to abandoned sites with more pollution incidents?'

Like Paul speaking beforehand, Jo also pointed out that pollution incidents have started to go up again. Also, of concern is the loss of expertise in process industries as people retire.

With drought and increased rainfall having the potential to impact on infrastructure at major hazard sites, the agency needs to be assured that operators will maintain standards and be fully prepared.

Pointing to the challenges ahead, such as protecting water sources, implementation of clean air strategies and working to increase biodiversity, the Environment Agency believes there will be more opportunity to further protect the environment when the UK is in control. Striving for a level playing field, the agency will put an environmental bill and a 25-year plan in place after Brexit.

"If we are going to crack the challenge of climate change, we need to work together," said Jo who referred delegates to the Chemical and Downstream Oil Industries Forum (CDOIF) – best practice for flooding.

With its eye firmly on the consequences for the environment, the Environment Agency's Regulated Industries Strategic Business Plan 2018-23 states that everyone has a role in working together to meet the challenge – failure is not an option!

Creating a better place

The Regulating for people, environment and growth document, which was published in October 2019 says, 'the right kind of regulation that is simple, risk based, proportionate and aims for partnership – helps enhance our environment, protects communities and unlocks growth'.

https://environmentagency.blog.gov.uk/2019/10/28/ regulating-for-people-environment-and-growth/

UK Climate Projections (UKCP) indicate that a 4 degree rise in temperature would mean a 4 metre rise in sea levels by 2300 https://www.metoffice.gov.uk/research/approach/collaboration/ ukcp/index





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A level playing field for all technologies

Not under-estimating the enormity of the global energy challenge to decarbonise, Brian Worrall, head of group sustainability at DCC, told the audience '*this is not for another generation*, *it's for now*!'



Comparison of alternative technologies to standard diesel

With oil still available in substantial quantities, banning it today is not the best way to decarbonise. Early evidence suggests oil derivatives can provide very viable alternatives and the industry continues to work with stake holders.

The energy transition is not a simple move from black to white. It remains a competitive and multi-faceted landscape.

"Decarbonising should not be a beauty contest between the different technologies. To resolve issues, we need all the resources we can get," said Brian. There is a danger of a knee jerk reaction with government trying to pick on one unproven technology over another.

Ensuring a full analysis of each technology's life cycle and resulting impact, all new technologies need to be encouraged, with the market then deciding the take up of each technology through its ease of use, price etc.

Calling for a level playing field for all technologies Brian spoke of plenty of opportunities for oil to act as a staging post including the decarbonisation of heating oil in the UK and Ireland.

"The industry's trade associations are uniting with alliances getting stronger. There's a lot we can do to embrace and adapt to the changing circumstances. Liquid fuel will continue to play a significant role in the future by driving efficiency.

"Clean fuel alternatives are available and to ensure more product consistency, we're looking at blending further up the supply chain."



Lessons learnt the hard way

Allan P Greensmith of APG Consulting and Training has delivered his presentation '*Never Again*' (dangers of complacency and inadequate safety cultures) to directors, managers and the workforce of major upstream and downstream oil & gas businesses across the UK and also in Europe.

"Human rather than technical failures now represent the greatest threat to complex and potentially hazardous systems," said Allan.

Talking from real life experiences, human factors leader, Allan who worked in UK refining for 35 years before retiring in 2017, spoke of a young life lost in an accident that he believes could have been prevented by being more aware and talking to each other.

"How we think and act is affected by our attitude, moods and behaviour at that moment. Although most individuals do not plan to make mistakes, this can cause us to act in error or choose to break the rules."

Allan urged delegates to 'treat every day in this industry with chronic unease'.

Warning that businesses which feel '*it couldn't happen* on our site, are the ones set up to have it happen there'. Lessons are learnt the hard way – these are people's lives – it's vital to never lose focus and never be complacent.

In 2017/2018 there were 144 fatalities in the workplace in the UK – equipment can be rebuilt and repaired, a life lost cannot.

Consider the human cost with better understanding of the why and how, focus more on the severity, do not gamble on probability, and remember you cannot beat talking and identifying hazards.

Reducing risk and protecting people

Caron Maloney, specialist inspector – risk assessment, HSE, who specialises in major hazard risks in chemicals, explosives and microbiological, reminded delegates of the risk factors to consider.

Looking at individual v societal risk, Caron spoke of the need to consider the complexity of a facility's operations and the risks that this poses to the wider society beyond.

Reminding as to the need to ask – how many people will be affected by an incident both on and off site? What type of casualties could there be and what response would be needed?

Taking into account such societal considerations, cost benefit analysis must consider beyond the facility. Keep it simple by asking **so what if** questions early on in the process and have the confidence to challenge assumptions for better understanding.

For guidance read – **Reducing risk and protecting people** – which looks at HSE's decision making process. It makes transparent the protocols and procedures HSE follows to ensure that the process of decision-making, including risk assessment and risk management, is perceived as valid. http://www.hse.gov.uk/risk/theory/r2p2.htm

Fuel Oil News | December 2019 21

Fuel fraud – the facts

CROWN OIL RECENTLY OBTAINED DATA FROM HMRC THROUGH A FREEDOM OF INFORMATION REQUEST; THIS REVEALED THAT UP TO £260 MILLION IN TAX AND DUTY IS ESTIMATED TO BE OWED DUE TO FUEL FRAUD

With as many as 5,821 instances of fuel fraud uncovered so far since 2016, the crime makes up as much as 2% of the UK diesel market.

In Northern Ireland, the problem of petroleum piracy is particularly dominant with illicit diesel, which makes up around 6% of the diesel market and costs HMRC an estimated $\pounds 40$ million in lost duty and VAT.

What's more, with a system based on random checks and punishments of just £250, diesel renegades are emboldened to take their chances and use cheap, rebated fuel in their vehicles, cheating thousands of pounds in tax from the government if they go uncaught.

"WE BELIEVE CRIMINALS ARE NOW EXPERIMENTING WITH PROCESSES THAT CARRY A RISK OF EXPLOSION AS THEY SEEK TO DEFEAT FUEL MARKERS" According to HMRC's Freedom of Information response: "HMRC conducts a wide range of activities to detect, disrupt and deter the supply and use of illicit fuel across the UK. HMRC is taking an increasingly datadriven, risk-based approach to tackling all non-compliance, placing greater emphasis on testing compliance further up the supply chain. For example, at retail and storage sites, where we can deliver a greater deterrent and enforcement impact."

Penalties

Red diesel, bought by those who want to use it in their vehicles, is subject to a fine of £250. For career fuel criminals, a £250 fine in the instance of a random check is a measly sum to pay when drivers use hundreds of litres of diesel a week on their journeys.

However, if you are found to knowingly use or sell rebated fuels for road use, a penalty of up to 100% of the duty evaded may be imposed, hitting large-scale fraudsters hard.

Fuel fraud national statistics

The data provided by HMRC shows that since 2016, there have been 5,821 detections of



This laundering plant discovered at Birkenhead in Merseyside is just one of several plants

fuel fraud offences nationally and although the number is decreasing, in the 2018-2019 financial year, 1,454 instances of fuel fraud were recorded. Since the latest financial year began in April, there have already been 479 instances of fuel fraud. From these, 4,495 vehicles (77%) were found to be using illicit fuel.

In addition to vehicle detections the figures below include commercial premises where fuel is supplied and stored and illicit sites such as fuel laundering plants

Detections
2,041
1,847
1,454
479

The number of instances where vehicles were caught using illicit fuel (not just red diesel)

alesely	
Year	Detections
2016-17	1537
2017-18	1448
2018-19	1122
01/04/2019-31/07/19	388

Fuel laundering, or red diesel dye removal is a particularly costly form of fuel fraud, even if relatively rare – with 37 operations detected since 2016. In recent cases scammers have had to repay as much as $\pounds 6.5$ million and $\pounds 520,000$ in duty conned from the government.

"We remain alert to the often dangerous methods criminals use attempting to remove the government markers from rebated fuel, and will continue to work with our multi-agency partners to tackle, detect and disrupt this crime," said Steve Tracey, assistant director, Fraud Investigation Service, HMRC.

"Given that laundering plants have been found close to homes and retail sites they have always posed a serious risk to the public. We believe criminals are now experimenting with processes that carry a risk of explosion as they seek to defeat fuel markers and I would urge anyone with information about this extremely dangerous activity to report it to HMRC."

The impact of IMO 2020

AT A TIME WHEN WORLD TRADE ACTIVITY HAS BEEN SUBJECT TO DISRUPTIVE DEVELOPMENTS, THERE ARE STILL A NUMBER OF IMPONDERABLES IN RELATION TO THE INTRODUCTION OF IMO 2020, WITH BOTH THE REFINERY AND SHIPPING SECTORS FACING CHALLENGES

In October 2016, the International Maritime Organisation (IMO) confirmed that its Marpol, Annex V1, regulation to reduce the sulphur content of marine fuels from the existing maximum of 3.5% wt. to 0.5% wt. would take effect from 1st January 2020

Date	IMO Marpol Annex VI
1 st January 2020	All marine fuels to be max. 0.50 % wt. sulphur content

Emission control areas (ECAs) were established with tighter sulphur emission limits than on the open sea – in the Baltic Sea, North Sea and English Channel as well as in North America and Caribbean Sea (which also include limits on NOx and particulates).

IMO 2020 is by far the most impactful regulation, requiring the displacement of almost 220 million mt/year global consumption of max. 3.5 % heavy sulphur fuel oil (HSFO) used as marine bunkers with max. 0.5 % material.

With marine use accounting for almost half of global HSFO demand, the displacement impact on the refining sector is also significant – and will be a challenge!

For shipping, which carries 90% of world trade by volume, a worst case price differential scenario has suggested that, globally, the sector could incur additional fuel costs amounting to up to \$50-\$60 bln/ year.

The corollary of this is the potential for the refining sector, especially those plants with high conversion facilities, to generate substantial additional earnings – at least over the first few years post 2020. The change will also increase the attraction of running sweet (low sulphur) crudes and so widen the price premium over sour grades.

Shippers' options

- Switch to burning appreciably more expensive, but available at nearly all ports and of predictable/consistent quality, marine gasoil (MGO)
- Switch to burning the newly available grade of max 0.5 % wt. sulphur fuel oil (VLSFO), available at many main ports but likely to be of varying quality/ specifications
- Retrofit vessels with exhaust gas scrubbers and continue to burn max. 3.5% sulphur wt. (HSFO)

Current indications are that about 4,000 vessels, out of a total of circa 60,000 commercial vessels worldwide that burn HSFO, will have installed scrubbers by end 2020. The cost of an individual scrubber can range between £1 million and almost £5 million – so, much will depend on the evolving price differential between 3.5% material and low sulphur grades. In addition, future, stricter regulation may render scrubbers no longer fit for purpose.

Global demand for VLSFO post 2020 is projected to be of the order of 100 mln mt, of which about half will comprise a blended (fuel oil/distillate) product; demand for marine gasoil is projected to rise by up to 70%, from circa 55 mln mt to around 90-100 mln mt. Demand for HSFO is forecast to fall to around 70 mln mt/year.

What are marine bunker suppliers doing?

All major suppliers of marine bunkers have announced the intention to supply VLSFO at the main ports, with much work done to accommodate VLSFO's storage infrastructure. What remains unclear is the specification

to which supplies will comply and in particular -

- The viscosity at 50 Degr C which, for marine fuel oils, can range from 10cst to 700cst?
- Cold flow properties which are critical to determine handling and storage requirements?

Lack of clarity around specifications will complicate market price determination and establishment of appropriate benchmark/ reference prices. In early November, indications in Rotterdam show VLSFO price quotations at circa \$60/mt (10%) below MGO but almost \$300/mt (140%) above 3.5% HSFO.

Within the refinery, there are several possible sources of VLSFO – straight from

distillation when combined with vacuum residue from thermal cracking, from vacuum distillation, from cracking processes, from solvent deasphaltisation, etc., and blends thereof/therefrom.

Inside Out

Until a definitive specification is established, by far the major challenge arising from the introduction of IMO 2020 is the compatibility of fuels between ports. Switching between marine gasoil and VLSFO is not an option.

Enforcement

Vessels can choose to ignore the sulphur limitation and continue to use high sulphur fuel without scrubbers. The extent of noncompliance will depend on the low sulphur fuel availability, the price of alternative options, the nature and scope of enforcement (and punishment) as well as uncertainty about future IMO measures.

Based on current rules, it will be flag and port states, not the IMO, that will oversee the control. The charges shall include detention of a ship and fines. Based on an estimate from early 2019, non-compliance is expected to be around 15% and is likely to gradually drop to zero by 2025.

Ships can also submit a Fuel Oil Non-Availability Report (FONAR) explaining why they had to use a non-compliant HSFO and what steps they took to obtain max. 0.5 % sulphur content fuel. Although FONAR might appear to be a 'get-around' procedure, in reality the requirements to trigger this provision are very stringent and potentially difficult to meet.

It will be a measure of the bunker supply sector as to how seamless the transition to 0.5 % max. sulphur fuels proves to be. There are uncertain times ahead, at least in the short term.

Tank Selector app from Kingspan Titan

The new **FREE** Kingspan Titan Tank Selector App allows your customers to 'see' Kingspan oil tanks in their garden so they can buy with confidence. Easy to use, the new app gives access to Kingspan's entire range of bunded oil tanks. With just a click of a button, the app uses augmented reality (AR) to superimpose a tank within your customer's garden area, giving a useful preview as to how it will look once installed. Other sizes and

shapes of tanks can be quickly and easily swapped in as needed.

The app also provides users with instant information about the tank, including physical dimensions, design features (such as bunding), 10-year warranty and smart monitoring features.

- ✓ Simply search 'Kingspan Titan Tank Selector' on Apple Store to get started
- Experience augmented reality virtually place 3D tanks in your customer's garden
- Let the app transform your customer's buying experience

 hand pick and 'see' a Kingspan Titan home heating oil
 tank on your customer's property before they buy.



Kingspan Titan Tank Selector is free to download from the Apple App Store with an Android App launching soon

Quick pipe repairs

The Qwik-Freezer[™] pipe freezing system eliminates the need to drain pipework by creating a freeze plug.

"Qwik-Freezer™ is a simple, low cost method for pipe repairs," said Luke Keane, HFT® technical sales manager. "Available from the Pipestoppers® division of Huntingdon Fusion Techniques (HFT®), Qwik-Freezer is a very cost effective and quick way to perform pipeline maintenance without draining the system, meaning very little or no system downtime.



A Qwik-Freezer™ video demonstration is available on YouTube: https://youtu.be/k_Vxv4m-SEA

"A flexible jacket is wrapped around the pipe at the point where the freeze is required. A nozzle in the jacket is then coupled to a cylinder of low-cost liquid carbon dioxide by means of a high-pressure hose. When the CO2 is injected into the space between the jacket and the pipe, at a temperature of -78oC, the pipe contents freeze and a secure 'ice plug' is formed, which seals the pipe.

"The 'ice plug' forms only in a section of the pipe covered by the jacket, so the resulting rise in pressure is very small and there is no damage to the pipe. The technique can be used safely on steel, iron, lead, stainless steel, copper, brass and plastic pipe. After the work is carried out, the ice plug is simply thawed, and the line is restored to full operation."

In use worldwide by many sectors including petrochemicals, the system is also beneficial for pipework where valves need to be changed.

Larger pipe diameters than 8" and the use of anti-freeze and rust inhibitors can create the need for the liquid nitrogen (LN2) temperatures of the Accu-Freeze[™] System in order to create a pressure bearing freeze plug.

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Transforming corrosion management

A company which aims to transform corrosion management has secured a ± 1 m investment to further develop its technology and expand into the oil, gas and petrochemicals sectors.

The annual global cost of corrosion is estimated at over $\pounds 2$ trillion by the worldwide corrosion authority NACE – The National Association of Corrosion Engineers, one of the premier authorities for corrosion control solutions.

CorrosionRADAR – which supplies the world's longest-range Corrosion Under Insulation (CUI) monitoring technology – has secured investment from the MEIF Proof of Concept & Early Stage Fund. This fund is managed by Mercia and part of the Midlands Engine Investment Fund, with additional funds from Mercia and private investors, alongside grants from the Government's Innovate UK and the Oil and Gas Technology Centre.

A spin-out from Cranfield University, CorrosionRADAR's patented system enables the move away from manual inspections to automated monitoring, and from reactive to predictive corrosion management. Earlier detection aids corrosion prevention, lowering costs and risk.



Using smart digital solutions, Dr Mehrdad Silatani, Dr Chiraz Ennaceur and Dr Prafull Sharma of CorrosionRADAR are looking to transform corrosion management in the oil, gas and chemical industries

The firm, which has offices in Cranfield and Cambridge, uses permanently embedded sensors placed on the surface of the asset to continuously monitor its condition and detect problem areas, along with advanced analytics and artificial intelligence to predict where faults are likely to occur. The system allows facilities managers to focus their resources most effectively and helps prevent leaks.

The technology was invented by Dr Prafull Sharma and Professor Hoi Yeung. They joined forces with Dr Mehrdad Silatani and experienced industrialist Dr Chiraz Ennaceur to launch the company in 2017, with backing from Mercia and a grant from Innovate UK.

The system is already being used by large corporates such as Solvay, Sitech and Reliance Industries. This latest round of investment will allow the team to develop new hardware for the oil, gas and petrochemicals industries, while enhancing its predictive analytics and software, creating 10 new jobs for sales and marketing staff.

"Corrosion is the biggest failure mechanism in the world, with a huge cost to industry," said Dr Chiraz Ennaceur, CEO at CorrosionRADAR.

"Our vision is to transform corrosion management through smart digital solutions and help pipeline owners and operators to have a safe, reliable and environmentally friendly operation."

PAGE 18 – TANK STORAGE ASSOCIATION 2019 CONFERENCE REPORT

Oil tanks – new Buyers' Guide

Everything You Ever Wanted To Know About Heating Oil Tanks is a new Buyers' Guide from the FuelTank. store.

Prepared to help anyone specifying or choosing a new heating oil tank, the guide is written in plain English and provides an overview of heating oil tanks on sale today. It also answers questions, frequently posed by heating oil users.

"When specified, installed and maintained correctly, most homeowners will never buy more than two heating oil tanks in a lifetime," says FuelTank. store managing director, Alison Bransby.

"So, it's only to be expected that buyers will often be unfamiliar with today's fuel storage options – our new guide aims to change that. We hope it will assist storage tank technicians, by helping manage consumer expectations and empower heating oil users, to make informed, purchasing decisions.

"The guide covers everything from material of construction, environmental protection, and fire safety, to theft prevention, maintenance, location, inspection and monitoring. Written to complement existing, technical publications, it emphasises that heating oil tanks are safety critical products. So, unsurprisingly we stress the importance of installation and maintenance by a suitably competent person, such as an OFTEC registered technician, added Alison."

The 24-page guide, which is available to download for free at **www.fueltank.store**, can also be requested by sending an e-mail to **hello@fueltank.store**.

EVERYTHING YOU EVER WANTED TO KNOW ABOUT HEATING OIL TANKS



The new guide is designed to help 'manage consumer expectations and empower heating oil users to make informed, purchasing decisions'

Wholesale Price Movements: 19th October 2019 – 18th November 2019

	Kerosene	Diesel	Gasoil 0.1%
Average price	38.82	38.85	37.56
Average daily change	0.43	0.46	0.45
Current duty	0.00	57.95	11.14
Total	38.82	96.80	48.70

All prices in pence per litre



Highest price Biggest up day 39.75 ppl +0.97 ppl Thu 24 Oct 19 Thu 31 Oct 19 Kerosene Lowest price Biggest down day 37.60 ppl -1.23 ppl Thu 17 Oct 19 Mon 18 Nov 19 Highest price Biggest up day 39.97 ppl +1.14 ppl Thu 24 Oct 19 Thu 31 Oct 19 Diesel Lowest price Biggest down day 37.43 ppl -1.17 ppl Thu 17 Oct 19 Thu 31 Oct 19 Highest price Biggest up day 38.23 ppl +0.95ppl Fri 25 Oct 19 Thu 31 Oct 19 Gasoil 0.1% Lowest price Biggest down day 36.27 ppl -1.11 ppl Thu 17 Oct 19 Mon 18 Nov 19 Gasoil forward price in US\$ per tonne \$570 \$560 \$550

The Fuel Oil News Price Totem

December 2019 – November 2020

	Trade average buying prices			Average selling prices		
	Kerosene	Gasoil	ULSD	Kerosene	Gasoil	ULSD
Scotland	41.37	54.07	100.60	47.47	58.35	103.98
North East	41.08	53.77	100.61	49.58	57.27	103.11
North West	42.87	56.94	103.44	47.95	59.95	105.95
Midlands	40.38	53.40	100.11	45.95	58.09	103.95
South East	39.96	53.04	99.70	52.57	59.04	101.29
South West	41.13	51.21	100.05	48.41	54.47	102.54
Northern Ireland	40.83	54.33	100.91	46.19	57.99	n/a
Republic of Ireland	56.69	61.11	103.72	61.93	64.71	106.53
Portland	38.99	48.93	96.92			

The price totem figures are compiled from the results of a telephone survey of distributors carried out on 06/11/2019.

Buying prices are ex-rack. Selling prices are for 1000 litres of kero, 2500 litres of gas oil and 5000 litres of ULSD (Derv in ROI). Prices in ROI are in \in . Wholesale prices are supplied by Portland Analytics Ltd, dedicated providers of fuel price information from refinery to pump.

For more information and access to prices, visit https://portland-fuel.co.uk/pricing.

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